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HYPNOSIS IN SURGERY

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There are four main indications for hypnotic treatment in surgery:

1. Pain
2. Spasms in the alimentary canal
3. Rehabilitation
4. Anaesthesia at operations.

Pain

Every surgeon who has performed operations aimed at the elimination of painful conditions knows that the effects of surgical interference on nerves, spinal cord and brain are uncertain and that often the relief obtained is but passing. Moreover, the possibility that the pain may become aggravated, even though the operation is technically successful, must always be taken into consideration.

In a previous paper (1954) I described the results of hypnotic treatment of 100 amputees with phantom pain. In 22 per cent of these cases I succeeded in eliminating both the pain and the phantom, and in another 13 per cent the pain was considerably alleviated. Since it is thus possible to influence phantom pain in 35 per cent of cases, I was tempted to try this method of treatment in other painful conditions as well. It was found that pain could be eliminated in the following disease conditions:

1. Osteoarthritis
2. Sciatica (even in cases in which operation had not brought relief)
3. Peripheral nerve lesions
4. Skull injuries with pain in the limbs
5. Pain in operative scars
6. Pain caused by spasm in
   a. blood vessels
   b. intestine
   c. ureters
   d. bladder
7. Pulmonary cancer
8. Cephalalgia of various kinds.

Several of the patients had undergone repeated operations without experiencing any relief from pain. A woman had been operated on seven

times without result and became symptom-free after as many hypnotic sessions.

Since we know that pain in the extremities is generally caused by vascular spasm, it is of the utmost importance to give suggestions of warmth alongside the suggestions of analgesia. It has been my experience that in all cases in which posthypnotic anaesthesia can be induced, the treatment is completely successful.

Spasms in the Alimentary Canal

The surgeon often meets with disease conditions resulting from spasm in the muscles of the alimentary canal. Dysphagia in achalasia and frequent attacks of vomiting in spasm of the stomach are conditions which often cannot be cured without operation. Ulcerative colitis is a disease which sometimes necessitates very extensive surgical intervention. Some years ago I treated a female patient suffering from violent attacks of vomiting. Since, despite medication, the vomiting was not alleviated and the patient was found to have a duodenal ulcer, I operated on her. There was no pyloric stenosis. One month later I reoperated upon her since the vomiting continued with unabated intensity. This operation gave no relief, either. I now tried hypnosis and all her symptoms vanished immediately. It is obvious that both operations had been entirely unnecessary.

In hypnotic treatment of patients suffering from spasm and pain in the alimentary canal there is reason not to limit oneself to symptomatic treatment but to try causal hypnotherapy along the lines suggested by Magonet (1959) and van Pelt (1955). The result is often surprisingly good.

Rehabilitation

In rehabilitation of patients who have been treated for fractures, joint injuries or poliomyelitis, physiotherapists often meet with difficulty because some patients feel such severe pain in their stiff joints that they do not want to move them and others are so indolent that they do not care to perform the programme of exercises prescribed. By inducing posthypnotic anaesthesia the pain factor is eliminated, and by suggesting to the patients that they cannot help doing the prescribed exercises their indolence is overcome. I once gave a poliomyelitic patient the posthypnotic order to perform a certain set of exercises each time he had smoked a cigarette. The result was good.

Hypnosis as an Anaesthetic at Operations

It is only in very rare cases that all other kinds of anaesthesia are contraindicated and hence the role of hypnosis as a means of anaesthesia

in surgery appears to me to be minimal. Only when the patient in question must undergo a large number of operations or when the change of a bandage, for instance, is very painful, as in cases of severe burns, is there any reason to try hypnosis. In obstetrics, however, hypnosis finds wide application.

Unlike Stokvis (1955), I believe that hypnosis is a valuable and far too seldom employed weapon for combatting pain. The surgical staff of every large hospital should include a hypnotist. With his aid, it would be possible in 25 per cent of cases to make pain disappear without operation and this would be of great benefit.

Summary

It is possible to treat painful conditions and spasms in the alimentary canal by hypnosis. In the rehabilitation of patients with limb injuries and fractures, hypnosis has also proved useful. There is seldom reason to resort to this method of inducing anaesthesia in surgery.

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TECHNIQUE IN CONDITIONING AND HYPNOSIS FOR CONTROL OF GAGGING[1]

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One of the many problems a dentist has to cope with is gagging. It can be considered in the same category as dental fear and apprehension. All three have the same common denominator. They occur involuntarily and can be overcome by conditioning through conscious suggestions and hypnosis.

The writer will discuss the bio-psychodynamics involved in gagging and retching, and the techniques employed in conditioning of unmanageable patients during the following dental procedures:

I. Intra-oral roentgenograms
II. Impression procedures
III. The management of patients who gag when wearing dentures or orthodontic appliances.

Gagging spasms are common in dental practice and may be excited in many ways. The mere thought mentioned of inserting a foreign substance in the mouth, the manipulation of the fingers in the oral cavity during cavity preparation, preparation of abutments, the process of inserting apical dental X-ray films, the taking of a bite, or an impression, and last but not least the insertion of a full or partial denture or a removable orthodontic appliance.

Gagging is a reflex act which is involuntary and causes one to retch or heave with nausea. It is also a protective mechanism, when stimulated by afferent impulses, to reject or void objectional materials from the upper alimentary tract or stomach. Landa (1953) states that the reflex act may be stimulated by tactile, visual, acoustic, olfactory or by psychic stimuli.

"Under normal conditions[2], the sensory nerve endings in the mouth, tongue, palate, pharynx, and larynx are constantly stimulated to activate a coordinated movement of the muscles of these parts and the muscles utilized in respiration that result in the act of swallowing, and

[1] Presented at the Scientific Meeting Society for Clinical and Experimental Hypnosis, San Francisco, California, August 1959.

[2] Discussion Group, Institute of Dental Research, The United Hospital of Sidney, The Dental Journal of Australia. 21, 188-204.

an inhibition of the respiratory center. On the other hand, different stimuli may result in an uncoordinated movement of the same muscles with an untoward act of gagging. These movements alter the shape of the pharynx and of the various openings into such manner as to compel a foreign body, real or imaginary to be expelled from the oesophagus or the pharynx, and to prevent it from entering the air or nasal passages.

"Gagging[3] may be accompanied by several other reflex phenomena such as:

a. Salivation
b. Lacrimation
c. Coughing
d. Sweating
e. Increased peristalsis
f. Manifestation of a complete withdrawal reflex characterized by the extension of the arms, the head, the neck and back, in an attempt to withdraw from the harmful stimuli."

The oral area of hypersensitivity is usually beyond the field of dental operative procedures. These areas are the base of the tongue, the soft palate, the fauces, and the posterior pharyngeal wall, and are stimulated by the afferent nerve endings of the glosso-pharyngeal, the trigeminal, and the laryngeal, and pharyngeal branches of the Vagus Nerve.

Gagging movements[4] are in contradistinction to swallowing, but not necessarily follow in the reverse order.

Retching consists of simultaneous and uncoordinated spasmatic contractions of the respiratory muscles. The contraction of these muscles through the closed glottis, thus giving rise to the characteristic retching sound that may accompany gagging and is a warning that if one persists with the irritating stimulus, the patient will rid himself of it by the final act of vomiting.

During the act of retching there is an impedance in the return flow of venous blood from the head, due to a contraction of the upper chest and neck muscles involved in this act. The veins of the head and neck are dilated, and hence the appearance of a face flush due to the venous blood congestion.

Physiologically, a gagging reflex may be broken by a reflex phenomenon which arises when the common neural pathways are congested by impulses. On the other hand, causing the glottis to close, but a stronger impulse from the respiratory center is evoked to alter the nasopharynx reflex to halt the gagging and effect respiration.

[3] Discussion Group: *Ibid.*
[4] Discussion Group: *Ibid.*

Little has been written about the psychic stimuli, and this is an important phase to understand in the management of most patients who are subject to gagging, especially the folks who wear the dentures in their pockets.

At one time or another, we have experienced the feeling of retching or vomiting when observing another person committing such an act. Psychosomatically speaking, we have the stomach for it, or we do not have the stomach for it.

In the genetic development of the human organism, the oral cavity was the first source of contact with reality. The mouth, lips and the tongue were used for taste and ingestion of the niceties of the strange world. If the food or medicine was palatable, the child swallowed it. On the other hand, if it was unpleasant, the child would spit it out, refuse to eat, and if forced to swallow, he would regurgitate the food subsequently. This became a learned mechanism. Any noxious substance which entered the gastric tract would be expelled as an involuntary act.

The noxious stimuli does not necessarily have to be food or medicine. Unpleasant memories during the physiological development of man, have been implanted in the memory cells of the subconscious mind. From early childhood on, wierd tales of unpleasant experiences in the dental office have been heard by children sitting about the house listening to the older folks describe their unpleasant experiences in the dental office. Seldom if ever, has a parent at the dinner table related their pleasant experiences in the dental chair. Instead, it is usually in this vein, "That So and So, he butchered me to-day." By comparison, the woman of the house would usually sit down at the dinner table and remark, "I feel so refreshed and relaxed to-day," after her visit to the beautician.

The impact of the unfavorable remarks may have repercussions at a later date without conscious awareness. Additionally, there is the progressive psychic trauma, which is built up in the subconscious mind, when patients repeatedly hear their dentists remark "If you don't take care of your teeth you will lose them," "If you lose your teeth you will have to wear partial dentures," and last but not least, "If you don't have partial dentures made you will have to wear false teeth." Is it little wonder when patients are given their dentures, they can't wear them because they gag when they are in the mouth?

The patient is usually consciously unaware as to the exciting cause, he will, upon the insertion of a denture, develop a gagging reflex. This is triggered by a frame of reference on a sublimal subconscious basis, which is easily provoked and manifested in a gagging or retching reflex from any stimuli within the operative oral area. This may occur, upon

the insertion of a mouth mirror, a tray, and an impression, or an intra-oral X-ray film. This reflex may stem back to the oral phase in the genetic development of the child, at the insertion of a foreign object.

It is quite common for children who are quite capable of fantasy, to tease their brothers, sisters or friends, of the horrible experience they had while having X-rays taken, or impressions of their teeth, despite the fact that they had an uneventful experience at the dental office. Adults are sometimes prone to exaggerate their heroic behavior during a simple dental procedure. However, this produces a psychic traumatic impact on those who listen and have to avail themselves of similar services. Other learned negative experiences may have been the observance of a denture wearer placing the artificial teeth into his mouth, or the sight of dentures in a glass of water somewhere in the house.

Technique

The techniques employed in overcoming gagging or retching are based on a simple common denominator. That is, proper interpersonal dentist-patient relationship. Semantics also plays an important role in the armamentarium of patient management during situational periods. Hence, before the commencement of any dental operative procedure, the dentist should establish rapport with the patient by portraying kindness, patience, and understanding. The patient should be enlightened as to the procedure which is to be undertaken, and the practitioner should project confidence and assurance at all times during his operative procedures.

The procedure (Stolzenberg, to be published) I am about to describe is utilized with all patients.

I proceed as follows:

"I am going to take some X-rays of your teeth. I will place this film in your mouth and you will relax while the picture is being taken." I use a film holder which facilitates the handling of the film. If I find that the patient reacts by retching or gagging, I will say, "Let me show you how *you* can overcome this yourself. This is a way to help, it is a game of imagination. Hold your arms out as I do, clasp your fingers together. Now I want you to imagine the things you say to yourself to appear as a picture on a screen behind here. (Point to hair line in center of the forehead. With older patients it is referred to as the mind's eye.) Repeat after me as you clasp your fingers tighter and tighter together. "I have a feeling that my fingers are getting tighter and tighter together. They feel so tight, so, so tight, that I feel they are glued so tight that even if I want to take them apart now, I cannot. No matter how hard I try, I cannot take them apart. Now I try, and I cannot take them apart. The

harder I try, the more difficult it will be for me to take them apart. Now, I stop trying." The last command is given as soon as you notice some catalepsy or even mechanical locking. Also if I notice the patient can readily unclasp her fingers. I then say, "Now I can take my fingers apart." While the above procedure is considered by many hypnosis practitioners as a method of suggestibility, I can continue into eye closure technique and then arm catalepsy and trance induction, when I am desirous of a trance state. However, I will stop at the separation of the fingers after the hand clasp technique, and say, " Were you able to take your fingers apart?" The answer invariably is "no." Some older children usually say that could have if they wanted to. Then I say, "I did not hold your hands, you did it yourself just with your own mind (pointing to patient's forehead). Now you can stop what you are doing. (Notice I do not refer to nausea, gagging or retching.) When I put this in your mouth just relax, breath in and out nicely, and breath faster to feel better."

Invariably, the above technique suffices to overcome retching and gagging when taking impressions or X-rays. If the patient does not respond to this technique, then trance induction is pursued until the patient is hypnotized. Post-hypnotic suggestions are given to negate retching or gagging.

The technique in taking impressions requires a moment or two to carefully indoctrinate the patient and properly condition the patient to accept the procedure. Many have suffered untoward experiences in the past, and it would be presumptuous on our part to think that every patient will not react. At best it is a procedure which the patient desires to have only once, and so does the dentist.

The patient is informed that an impression is to be taken, and the verbalization is as follows: "I am going to try this tray for size." (To a neophyte youngster you may refer to it as a dish which fits around the teeth.) "Into this tray I am going to place something that smells like dentyne chewing gum, and feels like jello or custard when placed in your mouth. As I place the tray with the impression material in your mouth I want you to relax, and breath through your nose. You are to listen and follow all instructions while the impression is being taken." If there is any sign of discomfort while trying the tray for size, such as gagging or retching, or if the patient says, "I vomit every time the dentist takes an impression or X-ray." I then say: "We have a new technique or method to overcome this," and the same procedure is employed as previously described in the management of intra-oral roentgenograms for the sensitive patient. During the entire procedure the dentist should compliment the patient such as, "You are doing

nicely, you are a very good patient, breath in and out, and in a moment or two we will be finished." The breathing pace can be regulated by suggestion, depending upon the patient's reaction. If there is any sign of retching, pace the breathing more rapidly as that in many instances will overcome the gagging or retching reflex. Upon removal of the impression the patient is again complimented on his excellent cooperation.

The successful management of the denture patient, partial or full, or the patient wearing an orthodontic appliance depends upon proper indoctrination. No patient should be given a prosthetic appliance without proper instructions of insertion, speech, the degree of discomfort that they may experience, and the care of the appliance. Some time should be spent with the patient to teach him how to articulate speech before leaving the office. The paramount appeal to every patient is esthetics, comfort, coupled with function and speech. Some time is devoted to an appeal to the psyche ego of the denture patient in dwelling on esthetics, and how she looks younger and better.

In the experience of the writer, there has been little need to hypnotize patients against gagging who wear prosthetic or orthodontic appliances. This can qualifiedly be attributed to the previously described technique. However, there were many referrals who could not wear their dentures because of gagging, they were hypnotized and conditioned to wear them.

In most cases the dentures were well constructed, while in others, the dentures had been trimmed to overcome the gagging reflex so that they were no longer serviceable.

The management of the troublesome denture gagger is no problem. Time, patience, and understanding are necessary to cope with these patients.

As a rule, they are frustrated, discouraged, and emotionally distraught. They need tender, loving care. In some cases, the gagging or retching may be a subconscious rejection of the foreign substance, as the impression material or the dentures. Usually, routine hypnotic trance and suggestions are often sufficient to by-pass the psychoresponse to the exciting stimuli. If the problem is too severe, then rapid results can be accomplished by an experienced psycho-therapist. Doctor Markey (1954), Chief Psychiatrist at Mt. Sinai Hospital, Cleveland, Ohio, stated, "The dentist need not be a psychiatrist to deal with his patients, but he will be better qualified to practice dentistry if he knows how to apply the principles of orthopsychiatry. The sooner the dentist realizes that, he can do a better job in a dental setting than the psychiatrist can. The psychiatrist can help enrich the dentist psychiatric orientation and skills, but it will remain true that the best dental psychiatry will be practiced by the dentist, and not by the psychiatrist."

If the denture wearing patient does not respond to the techniques previously described, then more intensive trance induction is persued. In the trance state the patient is told he will have a new denture which will feel very comfortable. He will be able to chew and speak distinctly. He will not remember the gagging or retching experiences. He will be content, happy and well adjusted with the dentures. He will feel like a new man. A suggestion is given that he will awaken at a given signal, smiling and feeling happy.

Similar suggestions are made to the difficult patient who gags severely during X-ray or impression procedures. He is told to forget, and block out past experiences of a similar experience and to relax, cooperate, and follow all instructions during all operative procedures.

Sometimes it is helpful to discuss with the patient the genetic pattern which developed the gagging reflex from a learned psychic stimulus, such as the rejection of food by an infant during forced feeding of food the infant does not like. He is told that it is not necessary to determine the exciting cause of the gagging, however, by this technic you can by-pass the neural pathways and establish a new neuro-muscular activity which will eliminate the gagging.

Caution must be exercised in dealing with a patient who remarks, "I've got a stomach full, I can't take it" or, "I'm all choked up, I can't swallow." These patients may be bordering on a psychosomatic problem and should be referred to our medical colleagues for investigation and study.

Discussion

Mental, physical or psychological processes are complimentary to each other in improving the human economy. No special type of personality is essential to the successful employment of psychological implementations.

Psychological adjuncts are not intended to replace chemotherapy, but rather to enable the practitioner to obtain optimum results. This eliminates the need for the patient to use drugs which depress or retard functional activity, and lessen the restorative power of the diseased organism to recover. Hypnotic suggestion acts only as an agent to stimulate the physiological mechanism, but it can not create anything new that is not in accord with the physiology of the nervous system.

Summary

Gagging and retching can be lessened by:

1. Kind, firm management of the patient.
2. Inform the patient what you are about to do, and what to expect.

3. Do not place too much impression material in the mouth or too many instruments.

4. Instruct the patient to breath in and out and pace the breathing preferably through the nose.

5. Talk and compliment the patient during procedures which cause gagging.

6. Avoid touching sensative trigger spots.

7. Remove all saliva.

8. Avoid prolonged retention of instrument or substances in the mouth.

9. Avoid showing anxiety in yourself.

Conclusion

The practitioner who is competently trained in hypnosis will find that there is a diminished need for the use of hypnosis per se, with most of his patients. His understanding of the psychodynamics will aid immeasurably in establishing rapport with his patients, and develop an excellent patient-dentist relationship. His semantics will be a vocabulary of positive words which will not trigger off negative reactions in his patients. The dentist as a rule, who has been exposed to hypnosis indoctrination, usually displays kindness and understanding, and treats his patients with tender loving care.

The highest achievement in a dentist-patient relationship is attained when the parent says, "You know, doctor, I would almost think you had hypnotized my daughter when I see how nicely she cooperates."

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EXPERIMENTAL PARADIGMS FOR THE HYPNOTIC INVESTIGATION OF DREAM SYMBOLISM[1]

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The process of symbolization has been both the most intriguing and controversial aspect of the rich fabric of theory advanced by psychoanalysis and unfortunately, the most resistant to scientific exploration. This paper will outline a variety of experimental approaches to the investigation of dream symbolism through innovations in hypnotic technique. The value of hypnosis in dream research is that it seemingly provides access to the symbol-translating mechanism. For instance, recall of forgotten dream elements can be facilitated, some subjects are able to "dream" upon command, and others demonstrate an increased capacity to interpret symbolic materials (Erickson and Kubie, 1938, 1940; Farber & Fisher, 1943; Rapaport, 1952; Moss, 1957a). The principal measuring instrument employed throughout these studies was the semantic differential, a method specifically designed to provide an objective measurement of the connotative (feeling) aspects of meaning.[2]

In an early experiment (Moss, 1957b), an attempt was made to test

[1] Presented at the XVI International Congress of Psychology, Bonn Germany, August, 1960.

[2] The semantic differential is not a particular test but rather a highly generalizable operation of measurement which can be adapted to specific research problems. Its originators postulate a geometrical model in the form of a semantic space defined by logical opposites. Factor analysis was used to identify the independent dimensions of this space, representing the ways human beings make meaning judgments. The generality of this factor structure was further tested by varying subject populations, concepts judged, type of judgmental situation and the factoring method used in analyzing data.

The measuring operation or semantic differential can be described as follows: Adjectives were identified as representative of the major dimensions along with meaningful processes vary; these have a high coverage of meaning on one factor and a negligible amount on the others. These logical opposites are used to define the ends of seven point scales. In practice, an individual judges a particular concept against a set of these scales. Judgments result in the successive allocation of a concept to a point in multidimensional space. In this manner, change in the meaning of a concept over time, the subtle differences between two or more concepts, and individual differences in the meaning of a single concept may be quantitatively represented. (Refer to Moss, 1960, for a resume of current research with the semantic differential.)

the psychoanalytic idea of dream symbol disguise, by translating it into the operationally defined concept of *semantic distance*. Ordinarily choice of a symbol should be determined by the similarity of mediational processes between a potential symbol and the latent content to be represented. However, according to Freud, anxiety-stimulating latent content results in the choice of symbols that are semantically distant; a symbol that is semantically distant from the latent content becomes unintelligible and may be said to be disguised.

Seventy-six dreams of a single patient in psychotherapy over a year period were intensively studied. A form of the semantic differential was used to measure the distance between symbol and latent content when the covert content was anxiety-arousing and when it was not. In operational terms, disguise would be indicated by a relative increase in semantic distance coincident with anxiety.

Identification of the meaning of dream symbols used by the patient-subject was a primary problem, and reliance upon conventional methods of interpretation was supplemented by training the patient to interpret his own dreams under hypnosis. The patient free-associated to the dream elements, first in the waking and then in the hypnotic state, in order to identify the latent content. Associative material obtained in hypnosis was invariably centrally-related to the meaning of the dream.

The following dream demonstrates the highly meaningful nature of the patient's dreams and his facility in dream interpretation.

The patient and his wife are going on an ocean voyage. They find the gangplank steep and lined with girls. On deck the captain inquires whether the patient has a newspaper. When the patient replies that he does not, the captain assures him that he'll find one in his cabin. The patient next travels slowly down a spiral slide and finds himself seated in the dining room. There he refuses an offer of hamburgers. He is suddenly ashore again, standing beside a convertible. A voice says, "Tell your uncle he is holding up the works."

Waking associations. The dream was essentially without meaning to the patient. The predominate emotion was apprehension. The significant associations were as follows. *Water:* the patient had long suffered a mild aquaphobia. *Voyage:* his only sea voyage was in military service. *Hamburgers:* the patient was surprised at his refusal since he liked hamburgers. *Uncle:* a favorite with the patient.

Hynotic reconstruction. The patient's first association was to *ocean voyage.* "The phrase 'going from the old to the new' enters my mind." He then drew the analogy that therapy was a means of exchanging an old, unsatisfactory adjustment for a new mode, and in this sense is like a journey. "I also find myself thinking of the voyage I took in service and how frightened I was." Therapy is therefore initially perceived as "a voyage on dangerous waters." (Later it became apparent that the patient unconsciously associated the awesome, cruel, overpowering quality of water with intense hostile impulses threatening his control and self-esteem.) The next association was to *gangplank*: "I remember

how very steep it seemed—it was hard getting aboard. My *wife* being with me meant that this is *our* problem—she's the main reason I'm here." The *line of girls* momentarily thwarted recognition, but the patient then stated quite positively they represented different aspects of the relationship with his wife. To *ship captain* he associated, "Men who are strong and strict, but just—it makes me think of in here, of you, that you will help channel my thoughts into the right direction, also that it will not be an easy job, either." The *newspaper* was explained as a reference to the dreams he had been told to report, i.e., "both are a chronical of events." "I remember telling you I didn't dream very often and you said 'don't worry about it.' 'Below decks,' makes me think of 'below the surface'—dreams come from below the surface when one sleeps, in the cabin or bedroom." The patient interpreted the *slide* as, "a roundabout way of reaching a goal," meaning his old inadequate mode of adjustment. "I'm afraid that when the going gets tough, I'll slide back into the old way of thinking." "*Hamburgers* make me think of 'food for thought'—they represent the things we're talking about here, things that are distasteful and I don't want to face or swallow." The *return to shore,* was interpreted by the patient as another expression of ambivalence towards therapy, that is, his fear that the content discussed would be unpleasant and he would want to escape. The *convertible,* like the slide, was translated as an old and established but "unsafe" (neurotic) mode of goal attainment. The verbal reference to the *uncle* stimulated recall of a recent statement by the uncle to the effect that the primary defect of the patient was a lack of self-confidence. This remark sensitized the patient to his tendency to be withdrawn from problem situations and made it difficult for him to retreat from therapy, i.e., "This remark keeps me from using the convertible." The three component parts of the dream are thus: ambivalence towards therapy, rejection of the situation, but inability to return to the old adjustment.

When the patient presented such a dream, one or more symbols were selected, and he was asked to rate these in-the-dream context on the differential. The patient would associate to the dream, first in the waking and then in the hypnotic state, in order to establish the latent meaning. Subsequently, in the waking state with complete recall for his dream analysis, the patient rated the identified latent content.

No adequate measure of the anxiety associated with a specific dream symbol was available; however, independent measures (psychological tests and staff ratings) indicated progressive patient improvement over a year's time. In addition, five clinicians agreed in classifying 13 of the patient's dreams as highly anxious ("nightmares"), 11 of which occurred in the first half of therapy. Contrary to psychoanalytic theory, the semantic distances between the mediational processes of dream symbols and things symbolized, as reflected on the differential, were not significantly greater for the first half as compared with the second half of therapy. Thus the hypothesis that dream symbols acquire a disguise function under the impetus of anxiety was not substantiated.

Mature consideration, however, led to the recognition that the semantic differential had definite limitations in detecting the effect of a dream

censorship process. While many competent therapists seem agreed that the affective qualities of the dream are usually not subject to distortion, this is the aspect of meaning primarily measured by the differential. Needed was the development of a denotative differential.[3] Since the relationship between symbol and latent content is typically quite tenuous, such a measuring instrument would also have to be extremely sensitive to relatively minute and highly individual aspects of meaning, rather than measuring the common variance among groups of subjects.

A second study used a form of the differential composed of scales designed to measure physical qualities (e.g., large-small, wet-dry, long-short, angular-rounded, etc.); subjects were also instructed to respond to the "physical" rather than the "feeling" characteristics of symbols and things symbolized. Instead of spontaneous night dreams, data this time consisted of hypnotically induced "dreams."

Three normal, psychologically naive subjects were first intensively studied through interview and projective techniques in order to identify areas of personal conflict. They were then induced to "dream" under hypnosis about both pleasant and unpleasant, or anxiety-arousing, personal content. The hypnotic products were typically similar to the autosymbolic phenomena experienced in the transitional hypnagogic state between waking and sleep; while symbols were employed, they appeared relatively poor in multiple meaning.

A female subject's concern regarding a dependency conflict is depicted in this brief, representative "dream."

I am hit by a big truck which comes to rest on me. It is very heavy. I appeal to my parents to remove it but they ignore me. I struggle very hard and finally succeed in pushing it off.

In every instance the subject was instructed to be amnesic for the dream suggestion. At the conclusion of a dream the subject rated selected dream symbols on the differential (e.g.: *truck*). She was next asked to associate to the dream in the waking and hypnotic states in order to clarify and confirm the meaning of the latent content, and to rate this

[3] Dreams reported during psychotherapy reveal many examples of denotative distortion. One illustration is that of a 34-year-old female patient who reported that at age 8, she had experienced a particularly vivid, recurring dream of being terrified at the pursuit of a tiny white dog. Hypnosis facilitated understanding that the dog had represented her recent discovery of death. As a child she had conceived of death as large, black, cold, ugly and threatening, and had attempted to neutralize this fear by representing it in her dream as a small, white, warm, cuddly puppy. Thus the denotative qualities were distorted to the extreme, that is, representation by a diametrically opposite symbol, but the affect remained appropriate to the latent content of the dream. The resistances which maintain repression are nicely illustrated through employment of hypno-projective dream analysis: Cf., Moss (1957c).

content on the differential (e.g.: *guilt related to my struggle for independence*).

Ratings of 42 symbols and the corresponding latent content were obtained from 31 anxiety provoking dreams, while 34 such measurements were obtained from 22 dreams with pleasant content. The average semantic distance under the two conditions for each of the three subjects, did not differ significantly. These investigations again failed to support the hypothesized effect of a censorship mechanism; the results of both studies suggest that the dream work is simply a translation, representing what a person thinks while asleep. An unanswered question was the exact nature of the relationship between spontaneous and hypnotic dreams, and whether censorship could be expected to manifest itself in the latter.[4]

Hypnosis provides a unique opportunity of studying the dynamic interaction involved in the acquisition and modification of the significance of signs and symbols, and a third study focused attention on the mode of symbolic transformation per se.

Four hospitalized, neurotic patients were again trained to produce hypnotic dreams, a procedure providing the opportunity to observe the transformation of a suggested content into its symbolic equivalent. An important innovation was the training of subjects to project *static* symbolic images on an imagined movie screen, such that a single symbol would depict a suggested content. Freud recognized that dream symbols are typically overdetermined, and this mechanism of condensation (in combination with displacement) was accorded primary responsibility for the unintelligibility of dreams. It is also a factor which greatly complicates precise semantic measurement. The present approach was

[4] Authorities are not agreed as to the exact relationship between hypnotic and spontaneous night dreams. M. Brenman (1949) states, "It is curious that investigators appear to have taken it for granted that the hypnotic suggestion to 'dream' issues in a dream." She argues that hypnotic dreams are relatively oversimplified, less influenced by unconscious thought processes, and are basically motivated by the desire to preserve the relationship with the hypnotist, rather than preservation of sleep. However, this argument is greatly weakened by her admission that spontaneous night dreams are by no means homogeneous in their expressive form and like the hypnotically induced dream, may range from an embellished reminiscence to a highly elaborated, symbolized product. In contrast, M. Mazer (1951) states that a dream should be defined by the nature of the production not by the circumstances of its occurrence, and that the hypnotic dream possesses all of the distortions characteristic of the regular night dream. It seems agreed that the hypnotically induced dream varies greatly, but that a general, unstructured posthypnotic suggestion to be carried out during regular sleep results in a product very similar to a spontaneous night dream. Present experiments are based on the assumption that hypnotic and spontaneous dreams are sufficiently similar in the employment of symbolism to allow cross-generalization.

an attempt to partially control the effect of condensation while studying displacement or symbolization. In addition, suggestions were restricted to the symbolization of simple, concrete sexual anatomy and activities. Abstract latent content is often difficult to rate against a denotative differential (just as a connotative differential was not applicable to many varieties of concrete manifest content). It was hoped to tailor both content levels for use with the denotative differential. This emphasis on sexual content was consistent with the psychoanalytic penchant for assigning sexual significance to dream symbols.[5]

Sometimes subjects responded with a single symbolization; they also responded with series of symbols, each representing the suggested content. For instance, one female subject was unhappily married, and possessed an intense fear, dislike and envy of men. When asked to symbolize the male organ, she perceived in rapid succession: "A knife, a bull with tremendous horns, an enema bulb." Her hypnotic associations revealed that she thought of men as aggressively assaulting women. She also produced a vivid memory of impotent rage towards her mother who frequently "violated me" with enemas as a child. Her symbolizations of the female organ were also revealing of highly personal attitudes: "An outhouse, a pedestrian traffic-tunnel (where men urinate), a door on which hung a sign 'No Peddlers or Agents,' and a new green car parked beside a pile of breadcrusts." The last represented her envy of male prerogatives. This approach allowed objective measurement, and identification of the elements of meaning common to a variety of symbolizations of a single latent content.

The possible methodological variations provided by hypnosis in the study of the symbolic process in action are practically unlimited, and several additional approaches are suggested in the following examples. Subjects were instructed to project a series of static symbols, each of which would become increasingly transparent in meaning, until the latent content was directly represented (a desymbolizing process). For example, when a second single, female subject was given a suggestion to symbolize the male genitalia, she responded:

"I see a couple of small peanuts. They are moving about, they won't stand still. Now they have spots like potatoes. Sprouts are growing out of the spots—they are changing, curving. It looks like a unicorn with a horn on its nose. I

[5] A characteristic suggestion given subjects was as follows: "In a moment you will fall deeply asleep. When you do, a dream will form. You will find yourself seated in a movie theater looking at a blank screen. You will then clearly see (a suggested sexual content) followed immediately by a second picture or series of pictures which represent or stand for the same thing; just as you might have experienced it in a dream."

just see the head. There are circular lines around the horn. The head is changing again, into a sac—it is wrinkled. Oh! testicles and penis!"

A second type, detailed experiment with the same subject will demonstrate the potentialities inherent in another variation, that of directly suggesting the symbols a subject should use to depict a specified content.

1. The subject rated three sexual concepts on the differential, *penis*, *vagina*, *intercourse*, interspersed among a dozen irrelevant (nonsexual) concepts. Hypnosis was then induced and she was instructed to fall deeply asleep and to have a dream of being seated in a movie theater looking at a blank screen. She was instructed to perceive the male sex organ on the screen, and that it would be followed immediately by a second picture which represented or stood for the same thing, "just as you might experience it in your dreams."

2. The patient signaled the beginning and termination of a dream. Still under hypnosis she reported having seen "a man with no clothes on—the lower part of his body. *It* looked big and hard and bony. It gave me a funny feeling in my stomach." She reported that this image was then replaced by a "necktie with a tight knot in the end of it." The patient was told that when she awakened she would be amnesic for this episode until a given signal, whereupon she would remember *only* the necktie (not its covert meaning).

3. The patient awoke, smiled, and apologized, saying that she must have dozed off. Questioning elicited no apparent memory for what had transpired. She was then asked to rate the general concept "necktie" on the differential. Next she was asked her associations to the concept. "An article of men's wearing apparel. I think of them as being attractive. They are so versatile and come in so many different shapes, colors, sizes, and designs. I also think of them as reflecting the personalities of the men who wear them."

4. At the pre-arranged signal she instantly and with seeming surprise, recalled the necktie she perceived on the screen (but not its association with the male organ). She was asked to visualize the scene as vividly as possible, and then to rate this specific necktie on the differential (Refer to Fig. 1).

5. The patient entered a second hypnotic trance, and was again told to perceive the movie screen and upon it the now familiar necktie, but that this time the necktie would depict the female genitalia.[6] She

[6] Another test of a prevalent psychoanalytic belief suggests itself here. To paraphrase Jones (1950, p. 98), an individual is free to choose his dream symbols or to make new ones, what he cannot do is to give a regular (universal) symbol a different meaning.

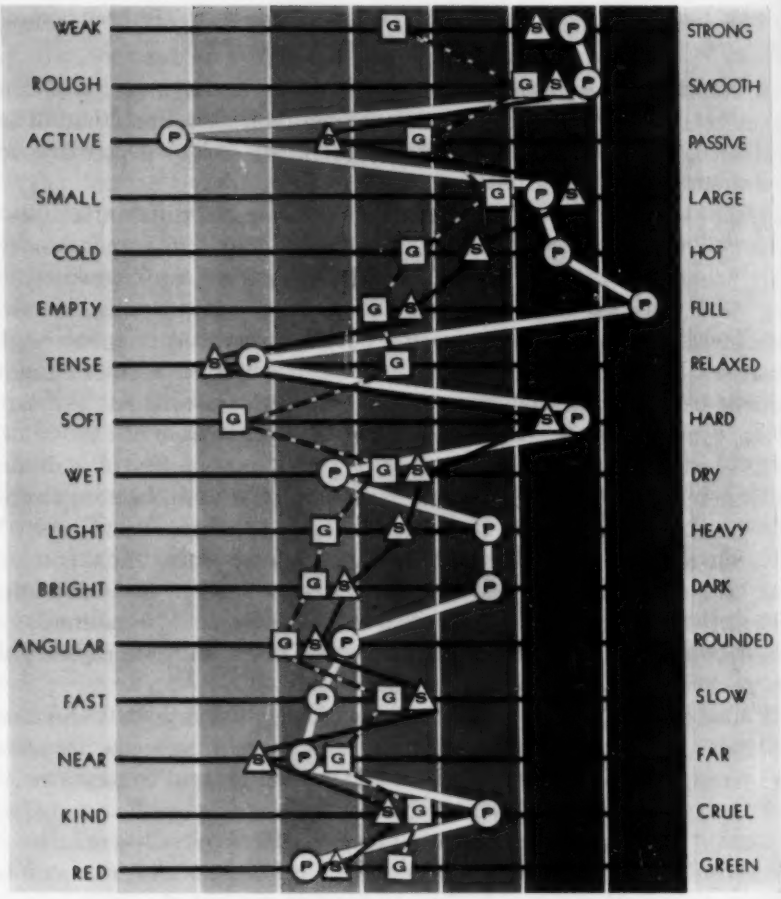

FIG. 1. Comparison of three concepts: *Penis* (P), rated prior to experiment; *Necktie* (S), as an unconscious symbol for penis, rated in dream context; *Necktie* [G], general or nonsymbol rated later out of the dream context. Quantitative relationship (D statistic): Penis vs. Necktie-nonsymbol = 7.68; Penis vs. Necktie-symbol = 4.80; Necktie-nonsymbol vs. Necktie-symbol = 5.48. (The smaller the number, the closer the relationship).

was again requested to be amnesic for the suggestion. Upon indication that the "dream" had ceased, she awoke and stated that she had again seen the necktie but that this time it was a "red necktie, just about the reddest necktie you can imagine; it had a crease down the center of it and seemed quite curved."

6. She rated this new necktie on the differential. Asked to associate to the new tie, she replied, "The red makes me think of something

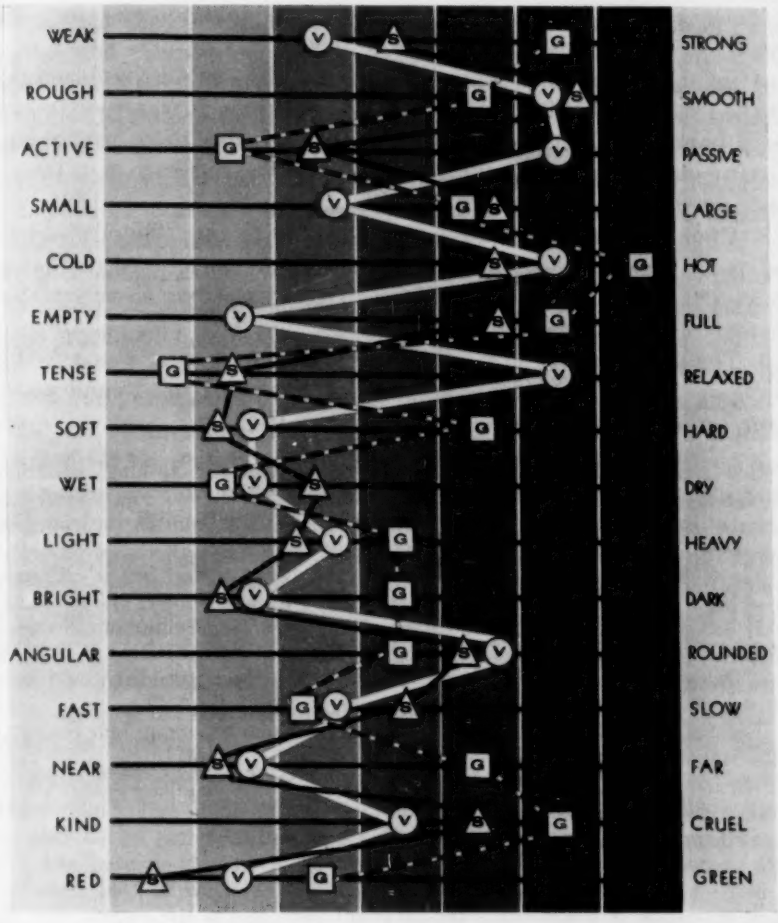

FIG. 2. Comparison of three concepts: *Vagina* (V) rated prior to experiment; *Necktie* (S), a male symbol which subject was required to use as a female symbol, rated in the dream context; *Necktie* [G], nonsymbol, rated out of the dream context. (Quantitative relationships: Vagina vs. Necktie-female symbol = 7.28; Vagina vs. Penis = 11.22; Intercourse vs. Necktie-female symbol = 6.56; Vagina vs. Necktie-nonsymbol = 6.40; Intercourse vs. Necktie-nonsymbol = 7.81.)

that is very bright and active, something which is very stimulating, it is definitely more feminine than most colors than men will wear." (Refer to Figure 2).

7. The subject was placed in a third hypnotic state and was instructed that this time she would briefly witness herself having intercourse, and that this scene would then be replaced by another picture

representing the same thing to her; she was told to remember only the latter scene.

After signalling completion of the dream," the subject reported that she had seen, "A hotdog between two slices of bun. It was an extremely large hotdog, pointing straight upwards, and also there was a large slice of onion between it and the bun." She was instructed to be amnesic for the entire experience.

8. Upon awakening the subject was asked to rate "hotdog" on the differential. By a pre-arranged signal she next remembered the hotdog seen on the screen (but not the immediately preceding scene or latent content) and was asked to rate it.

9. The patient was returned to a hypnotic state, and was asked to associate to each of the symbols she had used and to attempt an interpretation of their meaning.

First Necktie—"As I said before, an article of men's clothing, something intimately related to a man, something definitely masculine. The straightness of it makes me think maybe it is starched or stiff. The knot in the end looks like, well, like a man's organ."

Second Necktie—"That reminds me of a man's organ, too, but it's different somehow. The curve reminds me of the curve of a woman's body. The red makes me think of something that is very much alive; it makes me think of the vagina. I connect the idea of redness with the act of menstruation. I feel afraid of the penis though I know it would not really hurt me, but I am afraid it would make me pregnant. The vagina is not pregnant when it menstruates. The crease down the front of the tie is actually the opening of the woman's organ, and the curve is the shape of the vagina, too. Actually, this necktie is both male and female, but the female seems to predominate. The first necktie was only the penis. Both of them are stimulating, but the second is more so. It sort of makes me think of a penis being in a vagina, that is, of sexual intercourse."

Hotdog—"Well, the hotdog is the penis, too. It is very pointed and it is slanted—it is slanting away from me. This causes the thought that I mustn't touch it because it would make me pregnant. The bun is the vagina, and the fact that it is holding the weiner indicates that sexual intercourse is taking place. The whiteness of the onion indicates purity to me—the need to avoid having intercourse so that pregnancy will not occur. It, and the slant of the hotdog, and the redness of the necktie all represent the same thing—the need to avoid sexual contact."

10. The patient was obviously rather distressed at this point and was to talk further about her feelings. She responded that the hotdog had brought up a "forgotten" subject to her, "Something that I had put out of my mind and refused to even think about anymore." She then related that six months previous she had gone on a picnic with her boy friend and they had experienced intercourse for the first time. She spontaneously recalled a specific memory of lying wrapped in the blanket with him after having completed the act, and glancing

up over his shoulder and seeing a half-eaten, shriveled hotdog. She laughed and commented that it looked like his "hotdog." Thus, the choice of the symbol produced in the experimental situation was apparently determined by this repressed but dynamically active experience. She further volunteered that later she had experienced several nightmares in which she was choking on a hotdog, and that in the past six months for reasons until now unknown to her, hotdogs had become completely unappetizing.

It is of considerable interest to note that the subject is not merely a symbolizing automaton, but responds with symbolic productions which graphically depict personal needs and problems. Rich potentialities for the clinical employment of this technique as a projective method for personality exploration have only recently been explored (Watkins, 1956). Here the suggestion activated a very real conflict situation for the subject, reflecting both sensitivity of the method and the precautions that must be observed in its experimental application.

The remainder of the paper will deal with one specific application of the demonstrated methods, the study of the process of cognitive interaction involved in meaning formation and change which Osgood et al, refer to as the principle of congruity (Osgood, 1957, p. 200). Briefly, this principle states that whenever two signs having different meanings (different mediation processes and different profiles against the semantic differential) are related, the meaning of each shifts toward agreement with the other, the magnitude of the shift being *inversely proportional* to the *intensity* (degree of polarization, as reflected on the differential) of the interacting reactions. Two signs are said to be congruent to the extent that their mediating reactions are equally intense, either in the same (compatible) direction, or in the opposite direction. Results obtained in the reported investigations suggest several features concerning the process of dream symbol acquisition and modification.

1) At the moment of symbol selection a situation exists in which the latent impulse "scans" a pool of potential symbols which share one or more physionomic qualities with the content to be represented (e.g., the similarity in shape between hotdog and penis). Logically, the analogy may be quite tenuous, of course. Differences are largely disregarded, with two important exceptions: (a) Each dream has a general theme or setting [e.g., psychotherapy = a dangerous ocean voyage], determined by the predominant affect and the selection of one or two key symbols. The remaining symbols will tend to be consistent [e.g., gangplank = resistance, ship captain = therapist, cabin = sleep, etc.]. This gives the dream its theatrical quality. (b) The *preinter-*

action location of the potential symbol in relation to the latent content cannot be highly incongruent with respect to the emotional aspects of meaning. This would appear to account for seeming preference for symbols which, in their own right (independent of the dream context), are often innocuous or affectively neutral.

2) The fact that the latent content has, typically, powerful associated affective and cognitive processes, which in combination with the affectivity neutral (or possibly congruent) potential symbol, determines the flow of significance from the primary sign (A) to the secondary idea or symbol (B). These observations are completely predictable from the principle of congruity. The more polarized one sign is, relative to the other, the less change it undergoes. Where one member of an assertion is neutral, *all* the shift in meaning is concentrated on this concept.

3) Insofar as B receives its meaning from identification with A, it functions as its symbolic equivalent. In the dream a momentary situation obtains in which the interaction is maximized, that is, the meaning of each sign is shifted totally to the point of mutual congruence. At this moment the dreamer is completely credulous: He accepts the symbol as reality! However, the tendency is, after such cognitive interaction, for the meanings of related signs to "bounce" back to their original locus, and the whole phenomena has a mercurial quality which defies direct measurement, although the employment of hypnotic techniques allows almost immediate access to and reproducibility of this symbol-making process. When the dreamer awakens, there will be a reduction in the congruity effect both as a function of time and an altered state of consciousness (the semantic distance between latent and manifest content increases to the point where dream symbols become largely unintelligible).

It should be noted that when the affect associated with the primary idea is too intense (as in the last case example), an individual continues to experience a continuing, disturbing, logically incomprehensible identity of signs (hotdog = intercourse) resulting in a phobic reaction, or in the extreme case, a psychotic delusion or hallucination.

Summary

Several forms of Osgood's Semantic Differential were employed in the study of spontaneous and hypnotically induced dreams. While the use of hypnosis to investigate symbolization is not original with these studies, the feasibility of objectification of this elusive psychological phenomenon has been demonstrated, including a step towards identification of the psychological laws underlying the acquisition, and mod-

ification of sign significance. The primary intent of the paper is to stimulate and provoke experimentation in an important area of human behavior long resistant (resisted) to scientific investigation.

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HYPNOSIS IN THE STUDY AND TREATMENT OF SCHIZOPHRENIA—A CASE REPORT[1]

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At the present time our body of experience in successful psychotherapy with schizophrenic patients is still so limited that this case report of a patient in whom the schizophrenic process was of lengthy duration and severity, and for whom the prognosis was one of inevitable deterioration, is of value in itself. The use of hypnosis in the treatment of schizophrenia presents many problems and offers much opportunity for theoretical discussion. Out of such discussion we hope will develop new insights in the understanding of schizophrenia itself, the hypnotic state, and ways and means by which alterations of perception and behavior can be induced in hypnosis deliberately or spontaneously, and which are of therapeutic value in the relief of schizophrenia or in the experimental induction of schizophrenia. The demonstration of age regressions revealing a schizophrenia child, and the multiple personality structure which in the current literature on mescaline and lysurgic acid intoxications, frequently described as the outside talker and the inside me, provoke further inquiry into the theories of personality development.

Walter M., a twenty-four year old male was hospitalized April 9, 1946. For the previous six months he had complained of pain and numbness in his chest and of "music making his insides vibrate." He had been tense, anxious, unable to work, and was preoccupied with thoughts of God, the universe, and the meaning of life. He is the youngest of four siblings, at least two of whom have had evident schizophrenic breakdowns requiring ambulatory psychiatric treatment. Until his father left when Walter was fourteen, the home was the scene of constant quarrels throughout his childhood.

[1] This case was presented to the New York Society of Clinical Psychologists March 15, 1949.

As an infant the patient was considered healthy and precocious with toilet training completed at six months with no soiling after one year. He was precipitately weaned from the breast at eighteen months and spoke in sentences at age two. Following multiple fractures of the right leg at age six there were frequent night terrors. School work and social adjustments were poor throughout childhood and adolescence. He has always been shy, fearful and withdrawn. He had made spasmodic attempts with repeated failures to sing and act on the stage. There is no history of homosexual or heterosexual experience.

Four years previous to admission, having volunteered, he was inducted into the U. S. Army and immediately hospitalized. Three weeks later he was discharged with the diagnosis, "Psychoneurosis, anxiety hysteria, which incapacitated by reason of frequent and prolonged periods of mental depression and preoccupation with physical symptoms." We do not wish to quarrel with the army psychiatrist, but from the family's description of him at this time, this was undoubtedly a psychotic episode.

Following this he worked in a war plant and then on the stage until six months previous to admission. On admission he was dirty, unkempt and unshaven. He walked with a stooped, shuffling gait. His depression and apathy were evident, not only in his facial expression, but in his whole appearance. He would sit motionless, humped over, apparently unaware of his surroundings, for hours at a time. When questioned, if prodded, he would respond, but without apparent interest. His voice was shaky, high pitched, wavering and in a monotone. He would ask a question and, as though expecting no answer, would attempt the answer in rambling monologue. To direct questioning his responses were slow and without elaboration. He presented questionable hallucinatory material, stating that he felt "in great danger on the street," and repeatedly heard people make threatening and obscene remarks about him.

The Rorschach at the time of his admission was "a schizophrenic one, with the patient being markedly withdrawn emotionally and with little drive or interest in actively dealing with the environment. Underlying feelings of anxiety, depression, and of impending doom, as well as feelings of remoteness and distance from others, are very likely. The basic personality structure was probably obsessive-compulsive in make-up. At present, he seems to be trying to minimize the effects of his illness by withdrawal and limitation of his activities."

Hypnotic training trances were started in the first week of admission. After fifty hours devoted to training hypnosis, we could secure fair trances, but the patient was never considered to be a reliable subject in

depth hypnotic work. His attention span was extremely short since he was preoccupied with his own thoughts, as few and as unhappy and threatening as they were. He actually had a severe poverty of ideation, so that the same thought came back again and again. He was no good, had never been any good, and never would be any good. His attention was difficult to attract away from his inner world. That was all he could see. We had no substance to him. We were cardboard figures, reaching out paper hands. The world had no substance for Walter, and neither had we. It was almost impossible to attract his attention or hold a conversation with him.

When we first met Walter, it was like meeting a little drowned Pinocchio just after he has been pulled out of the wet ocean. He just sat in a corner. When we went over and touched him and spoke to him, asking him to get up, he would. But if we said nothing, he sat in the same place, staring at the same spot on the wall until the nurse came along and said, "It's suppertime." When he got up he was stooped over, shuffling, his arms hanging down at his side. He seemed a very old man, worn out, tired. If we asked him, "How are you feeling this morning, Walter?" he would reply, "How am I feeling this morning?" "Yes, Walter, how are you feeling this morning?" "How am I feeling this morning?"

Drugs and mechanical means were relatively useless in facilitating the induction of hypnosis with Walter. It was only by patiently being with him, drawing him out, gaining his confidence that the first light traces were induced. But once hypnosis could be developed we were able to give Walter perhaps the first happy experiences of his life. For we would send Walter back in hypnosis to the times in his life which we knew about where he had been a failure, where a happy ending had never taken place, and make it possible for him to relive these traumatic experiences with a happy and successful ending. Before the onset of his illness he had been a professional singer. We had him sing to an hallucinated audience. At the auditions in the past where he had lost his courage and had been unable to sing and ran away in a panic, he now sang beautifully, and the audience now responded with enthusiasm and happiness. Immediately there would be a tremendous feeling in him of having overcome an obstacle which had seemed completely impossible to ever overcome.

Along with this work we also placed him under a variety of new circumstances in hypnosis calculated to produce emotions such as sorrow, happiness, fear, anger, etc. Under hypnosis his emotions were free, but consciously they had been so severely repressed that no evidence of his having any emotion at all was evident. But as he was able

to use his emotions, and to feel his use of them in hypnosis, it gradually became more possible for him to use the same emotions in his conscious personality.

I might mention here that all of the above hypnotic work was done without amnesia. Amnesia was guarded against by our specific instructions to remember so that what he experienced, and what we suggested to him would be available to his conscious personality. We feel that the absence of amnesia not only speeds up the therapeutic process, but also relieves a great deal of anxiety and paranoid reaction. Amnesia was only induced in age regressions and other experimental work.

It gave us all an uncanny feeling to see Walter, whose expression was normally so blank consciously, respond under hypnosis to our suggestions that he be happy, and laugh and tell a joke. We could feel ourselves laughing with him at his truly real expression of his happiness.

Soon we were able to send Walter to patients' parties in a waking open-eyed trance. There he had his first contact with other people, and began to realize that there were other people like himself who were crippled and sick, who wanted to enjoy life but just could not, except in a very limited way. And when he found that these people responded to his singing, that they really needed the happiness his songs brought them, he was, suddenly, a singer. Instead of standing there like a disjointed wooden doll, he was alive. He sang with his whole body, had meaning and feeling and emotion in every part of his body. His singing instructor was more enthusiastic about the change in Walter than anyone else. Walter took it quite simply. To him there was no mystery in hypnosis. It was just a way in which somehow his fears and his anxieties could be set aside so that his voice was no longer inhibited.

Some disorders of perception require deliberate therapeutic intervention, others appear to be relieved spontaneously as a part of the general improvement in the psychic economy. The hallucinatory material which Walter presented was, as mentioned, questionable. It was not until three months after his admission and after returning from a weekend, that the patient presented the negative evidence in his complaining that something had happened to the streets of New York. "Doctor," he said, "what have they done to the people in New York City? What have they done to the streets? Is there some new police regulation that people have got to stop yelling nasty words at me? I was out on the street and nobody yelled insults at me. And the trees waved their leaves. Everything seemed so friendly and happy. What's happened in New York? It used to be so frightening. Everybody seemed to hate me. No one wanted me on the street. The trees glowered at me, hated me with their leaves, shushing me along. The people yelled nasty

words at me. There was a gloom. I had the feeling that something was going to happen all the time, something very terrible to me, as if a storm was about to break. And now the sky is blue and clear, the sun is shining, the trees are rustling their leaves, and the people are busy—not paying much attention to me, but they seem to feel that I belong on the street, that I've got as much right on the street as anybody else has. Nobody's said anything nasty to me."

In regressing the patient to infancy, the quality of the regression was inadequate. Clinical reversal of the Babinski was unobtainable and no chronaxy studies were done.

The earliest authentic age regressions were to the age of three years. Always at this level the same picture was obtained. In a very childish way he would keep turning something with his hands and sing in a high childish treble "raga raga raga." He could not explain this. Telling us that he turned the wheel of the fountain to make orchestra music did not clarify the pantomime. His mother, however, remembered he would at this age turn the stools at his father's soda fountain and that he called it an orchestra. She also confirmed that his favorite foods were malteds and baked potatoes. It is significant that although he was frightened, insecure, and withdrawn into his fantasy play at this level he seemed happy as long as he was not interfered with. As soon as he was questioned about his father he would become distressed and unhappy. His father yelled at him, ran after him, took his candy away and beat him. He liked to have his mother put him to bed and to feed him. He was afraid of things that move in the dark—boogie men. "They scare me—might hurt me—take me away." He would like to be a fireman, fire engines go fast, make a lot of noise. When he goes to bed everything goes fast.

Once at this age the hypnotist passed his hand over his eyes saying he would see a scene. He reported "I see my mother, I see myself inside my mother, I am inside my mother."

The patient's Rorschach records were evaluated blind; that is, his case history was not known to the examiner. A study of the records would suggest that whether the age regression is an authentic one or merely a memory regression, the personality characteristics and conflicts elicited at the various age levels seem to correlate rather closely with the developmental or clinical history of the patient.

In contrast to other adult patients with whom we have worked in Age Regressions in childhood levels, this was a child with whom none of us could engage in play activity. He would answer questions, but he could not be induced into any type of play activity, nor would he be distracted by the toys when taken to the playroom. Each time in

hypnosis at age three, he reenacted exactly the same scene, repetitiously turning the fantasy stool and singing the same repetitious song. He appeared to be completely alone, as if he had no awareness of other people in the same room. When at staff meeting this age regression was demonstrated, it was the opinion of Dr. Nolan D. C. Lewis that this indicated such a nuclear shattering, such a severity of the long continued schizophrenic process that no prognosis was possible except that of continued deterioration. He further stated that no relief could be expected from intervention with physical types of therapy such as insulin coma or electroshock.

Rorschach records were obtained under hypnosis at 5, 6, 10 and 15 years but were not done in chronological order.

At five years it was felt that Walter's verbal expressions, general vocabulary (Binet) and motor coordination were much too superior for an authentic regression. He gave a total of only seven responses to the Rorschach (rejecting Plates II, III and IX) and his reaction times were extremely slow. He appears to be very unsure of himself in new situations and becomes very blocked in the emotional sphere as well as in the intellectual area. He displays little physical vitality or vigor and one can speculate that his contacts with others in the environment have not been very reassuring ones, and that he sees the world as a very threatening place to live in. He is probably extremely timid and sensitive, shy and withdrawn, and it is likely that he has very few friends. A conflict with the father figure as well as some sexual concerns or preoccupations are also indicated.

At six years it was felt that the regression was a more authentic one. The protocol still reveals a picture of fear, depression, withdrawal and insecurity. Walter shows the reaction pattern of a child who has experienced a deep sense of emotional rejection (by at least one of the parental figures), even though physically he was well taken care of, and one who tries to strengthen his feelings of security through his fantasy living.

For the first and only time (as far as the Rorschach responses are concerned), he spoke about "things going fast." On the Inquiry to Plate X, he mentioned "eyes . . . this looks . . . looks . . . looks; it looks and goes . . . I dream of things that go fast . . . everything goes fast . . . I don't know . . . that's the way I dream . . . it scares me." It is probable that at this age he already has developed obsessive ideas and possible phobic fears and it can also be speculated that at this time in his development he felt overwhelmed by his own impulses and demands being made on him to "conform" and be like other children.

It is probable that a traumatic experience intensified his conflicts at

this time and that Walter has not yet developed any defense mechanisms which would help him alleviate his anxiety or disturbing feelings about this experience. Strong guilt and some sense of body damage associated with masturbatory practices are also very likely.

Though at this point one would hesitate to call Walter a schizophrenic because of his age, the retreat into fantasy living and the lack of emotional responsiveness to the environment are very suspicious. His disturbance of the time sense strengthens the possibility of the diagnosis of childhood schizophrenia and would be consistent with Bender's findings in her schizophrenic children: "Rotating and whirling motor play in all planes make up a large part of their activities. It finds expression in their dreams and all other forms of fantasies and is the nucleus of many of their psychological problems such as fear or preoccupation with losing their limbs, inability to determine the periphery of their own body or the boundary of their personality or 'ego boundaries'; their relationship to the reality of the outer world, to determine their own center of gravity, to relate themselves to time and space or even be sure of their own identity." (Bender, 1947)

Clinically there was little difference between the regressions at five and six years. He was more frightened, unhappy, insecure, and withdrawn. He cried for hours on end when forced to go to kindergarten. He described frequent quarrels and violent primal scenes in which he feared his father would kill his mother. At age six he suffered multiple fractures of the femur and leg and always went back to a scene in which he was lying in bed and in a cast. His father became violently angry and threw his shoes out of the window. With mirror gazing we recaptured a four year old memory of his father masturbating him, and his fear that his father would crush his penis and he would die.

At age seven he remembered his mother scolding his father for masturbating him. It is possible that the trauma of recent experience shown in the Rorschach is his intense castration fears mobilized by the actual injury, and his father's continued masturbatory attacks. He was never able to enter into group activities with children. Even then he felt excluded and unwanted by children his own age. He was unable to learn to play games involving physical activity.

As was mentioned in the Rorschach, he complained of things going fast. This disturbance of time sense was present at every age level, and occurred not only at bed time, but on awakening and during the day. He also complained of eyes watching him in the dark.

At age 10, obsessive-compulsive personality characteristics are quite evident and he is still underactive and constricted, maintaining rigid control over his thought processes. For the first time, however, some

attempt at achieving affective contact with the environment is evident. In spite of these attempts, he still finds it difficult to see the world as the group does, and still has no real sense of self or identity and feels different and isolated from the group. Walter does not seem to know how to go about making himself acceptable to others, and he seems to have few defenses other than his fantasy living (though it is less intense than it was at six years) which would automatically relieve his feelings of anxiety, loneliness and depression. It is probable that some of his conflicts are expressed through the motor or body (gastro-intestinal) system. He appears to be overdependent and attached to the mother figure, but there would seem to be much conflict centering around his relationships with her. On the whole, however, he seems somewhat better adjusted at 10 years than he did at five and six.

At the age of 10 the outstanding clinical impression was of a frightened child singing in a beautiful soprano voice "If I had the wings of an angel." No matter how long he sang his voice showed no sense of strain.

His muscular incoordination had become more marked. He could not keep in step with other children and felt out of place with them. He was never part of a group. He was tormented by other boys. His school work was poor. His time sense continued disturbed. He was preoccupied with an hallucinating figure which he described as The Man with stripes like Uncle Sam.

At fifteen, according to his Rorschach, there is no essential change in the basic personality structure. He is still withdrawn and underactive, there is an intensification of his psychosexual conflicts, and, for the first time, a homosexual conflict is apparent. He shows a marked fear of the future and an inability to make or organize plans for the future. He also seems afraid to realize a conception of a role in life so that he probably would be very inconsistent in dealing with others in important personal matters. Conflict with the father (or intensification of the Oedipal conflict) seems to have been reactivated at this time. Another traumatic experience is possible. He still is unable to establish any meaningful interpersonal relationships and finds it necessary to maintain an ever-rigid intellectual control over his thinking. There seems to be much underlying guilt; he is rather sensitive to personal references and seems to feel that others mock him or make fun of him. Though aware of the urgency of the problem, he may fail to do anything about it. Repression and obsessive-compulsive mechanisms are probably his main ego defenses, though he probably still expresses some of his conflicts through his motor or body system because of his inability to face them.

The main difference in his admission Rorschach at the age of twenty-four, and those obtained at early age levels under hypnosis, are the outstanding feelings of impending doom, the weakening of the obsessive-conpulsive mechanisms, and stronger subjective feelings of depression and anxiety.

Although many age regressions at adolescence were done, only one Rorschach at age fifteen was obtained. Historically this was a year after his older siblings had forced the father out of the house. He also related a vague homosexual experience "A man brushed up against me." He was very unhappy and out of place at school and longed to feel a part of something. He wanted to feel a part of nature, of the clouds and the trees. He was still incoordinated muscularly, shy, and without friends.

In response to the attempt to regress this patient to age eighteen, he refused saying, "I don't want to be eighteen, I won't be eighteen." Finally, to escape the authoritative demands of the hypnotist the patient escaped into sleep. Then in the course of time the conscious working over of his fears at eighteen when he was frightened by the hallucinatory experience of his recently deceased friend calling him, it was possible to revive the age regression. In other words, the conscious ego had been strengthened to the point where it could tolerate the experience. Does this also mean that the conscious working through lessened the emotional cathexis of the traumatic experience?

In this case we found that any use of the age regressions for research purposes was destructive. For days afterward, the patient would be more overwhelmed by his depression and the schizophrenic behavior was more obvious.

The patient was once progressed in time to his forty-second year. In this procedure as with regression, the patient was disoriented in time and space and reoriented at a future date. The hypnotist assumed the role of a friend whose name was given by the patient. It was hoped by this technique that we would discover the patient's fantasies as to his future. Would this indicate some prognostic value as to his attitude towards his own recovery? Would it give us some measure of the constructive forces of the ego? In this progression he revealed himself successfully singing. He had been married seven years back at age thirty-three, to a girl he had met in one of the shows he was singing in, and he had two children. He was asked about his illness and he said he had been sick at twenty-four and that his illness was due to "not having the right idea about things." He indicated he was cured because "the doctor and I straightened things out." His mother was in good health and his sister had married. A Rorschach was administered. The pro-

tocol was an obviously schizophrenic one, showing contaminations, autistic fantasies, and a complete weakening or disorganization of the "ego." Paranoid ideas, confused psychosexuality and fear of impending disaster were prominent. At the end of the Rorschach, however, he put his age at twenty-four, indicating that sometime during the tests he had slipped back to his proper age.

As Walter began to feel again, to feel himself and the world around him, he confessed a greater and greater restlessness, and he talked more about how his father had destroyed him through his constant, destructive criticism. He confessed to a feeling of a schism within himself, and said he felt as though he were fighting within himself. When he was given the posthypnotic command that he would continue to feel happy, strong, and good until the next hypnotic session, he found that he had nightmares in which he was struggling within himself. He said that there was something going on within himself that he could not understand. He confessed that he always felt that there were two parts of him. One part wanted to sing and make people happy. The other part hated himself and the world. The conscious personality was completely the hating incorporation of his father. It was only in hypnosis that any remnants of the little boy who wanted to sing remained. This part of him that was his father could make the body of the child do things awkwardly and badly so that the child would be ridiculed and scoffed at and hated by his friends and companions and had gained more and more strength in the months before he was hospitalized, until finally it won completely.

Walter revealed a history in which his father was in every way the dominating, parasitic individual. He ridiculed, was angry, threatened, abused, and enslaved the child. At the same time he seduced the boy as well, and gave him a sexual expression and outlet which was forbidden, wrong and dangerous, yet very pleasurable. Walter never was able to remember that it was actually pleasurable for his father to masturbate him. All he can clearly remember was that it was frightening and forbidden. He was afraid his father would pull his penis out or crush it and he would die. He remembered that his mother was worried about him, and scolded the father most ineffectually. We knew that deeper, under the surface, Walter was jealous of his mother and her ability to seduce the father. He was somewhat proud of his own ability to take the father away from the mother on a sexual basis. He enjoyed the excitement and the thrill, and in this way confused danger with sexual pleasure, so that only in the situation of danger would he hereafter find sexual pleasure. At the same time all sexual pleasure was confused with his father's person and personality. Why this did not go on to the de-

velopment of homosexuality, we cannot say, except that Walter was also very attached to his mother who was a very smothering, overprotective woman who took him into bed with her, and to his sister with whom also he cuddled, found solace and comfort. His one attempt to look under little girls' dresses was sternly disapproved of by his mother, but apparently his wish to cuddle his mother was never disapproved of. So, as a child this boy was sexually interested in his father, mother, and sister, and apparently in the end more interested in his mother than either his father or his sister.

The first dream of which we have a record indicated that he felt the need of someone to watch over his very dangerous attachment for his mother. He speaks of himself as two people: one is watching and vainly attempting to intercede and prevent the other from making sexual advances to his mother. He lacked the ideal person to guard against the violation of his mother, who, of course, should have been a good father. From the very beginning the need to have his father in order to have sexual excitement with him, to somehow placate this impossible person who demanded everything in screaming temper tantrums, was somehow a terribly important part, and finally became a secondary personality. As the years went on, the commands implied in his father's hatred of him, and incorporated in the constant reproaches of himself that he was no good and would never succeed came true more and more. Nothing he did ever did come out right. Everybody hated him, ridiculed him and made fun of him. He really was no good. In other words, his whole life was a proof that his father was correct, that his mother was wrong. And as Walter had more and more proof that his father was right, the dominancy of this destructive parasitic personality which was not himself but his incorporated image of his father increased.

There were, after all, certain definite advantages in being his father. He could then enjoy his mother sexually, he could masturbate himself, and enjoy himself in a special way.

During the six months before admission there was no longer any fight in Walter. He was completely his father. But only that part of his father which was hating and dominating and devastating the little boy, Walter. He could never be like his father in being cruel and nasty to other people. He could only be his father in relation to himself, so that all his father's anger and retribution was visited alone upon his own head. No one else suffered except in seeing that he was unable to care for himself and looked slovenly, dirty and miserable. Only the child Walter within himself suffered the bitter dregs of almost death. He was spiting his father. His father could not use the body of Walter, and the child Walter

could not use the body of Walter either. The body of Walter sat on a bench and stared at a spot on the floor.

The first thing we had done was to change the balance of things and disturb this painfully acquired equilibrium. We threw the weight of our challenge in this way on the side of the child who had been defeated so many years ago and who had given up completely these last few months. We taught the child to sing, to love, to feel again the things which had been shut out for so long. But as Walter began to confess the things which this change in balance produced in him, we realized that the split which was developing in him had to be recognized and dealt with. We decided to make a rather surgical separation of the two parts of Walter. That part which we like and found likeable, and seemed untouched by the meanness and viciousness of his father we would call the good Walter, and that part which was his father, with all the nasty and depressing qualities in it we would call the bad Walter. We very sanctimoniously announced this to him and were then quite amazed to find that he had thought it all out much before us and had realized he was two people and had named them. The good Walter, the real personality was called Walter Positive, and the incorporation was Walter Negative. When asked where he had gotten these names he recited a song which was then popular, "Accentuate the Positive, Eliminate the Negative." This was the theme song of Walter Positive—accent the positive, eliminate the negative.

We gave Walter Positive our complete support. He was put in charge of Walter's body and every stronghold of Walter Negative was hypnotically overcome. Walter Negative was pushed out of Walter's shoulders, chest, mind, and finally out of his whole body. But Walter Negative was ruthless and would sneak back in. The next day we would ruthlessly exorcise him again.

During one hypnotic session at this point, Walter Positive was asked if he had had a dream. He said no, but Walter Negative had. We asked Walter Negative what it was. (We could call on either personality at will at this time—either would respond. Walter Positive soon became the presenting, dominant personality as we strengthened his cause). Walter Negative said, "I saw Walter Positive walking down the street. He was very gay and happy. And there was a little man with dark glasses sneaking up behind him. That was me. And some day I'll get hold of him and I'll take over again and he'll never break loose." When Walter Positive heard this he took over and said, "I heard what Walter Negative said, and I hate him. I want to kill him. I want to kill him right now. I want you to teach me how to kill him. I want to get a knife and stab him."

We told him that this was not the way to do it, but for several days thereafter, all Walter Positive thought about was killing Walter Negative, and all Walter Negative thought about was overcoming and subduing Walter Positive. This was, of course, extremely serious business and not to be laughed at. Here is the conflict out of which accidental death and suicide may many times arise. (This will be brought out more clearly in another case in which the conflict between personalities and their wish to destroy each other continued over a long period of time and was eventually successful. Bowers et al., 1955) In Walter the conflict lasted at this height of murder or intended murder for something like two weeks. Nothing serious really happened except that Walter tried to leave the hospital and was actually A.W.O.L. for a day or two. When he came back at the request of his singing teacher, it was finally found that the only thing he felt the hospital might do to help him was to teach him how to kill Walter Negative. This, of course, we could not do, but we could teach him to eliminate Walter Negative and in the process to eliminate his less proper wish to kill the hated secondary parasitic personality. We attempted to eliminate Walter Negative by withdrawing all reasons for his existence.

We allowed Walter Positive to do this himself by having him return to the ward in an open-eye waking trance. Any word of criticism from a fellow patient, and Walter Negative would return. But in the trance state Walter Positive, knowing he had our unqualified support, could join battle and eventually reestablish himself. It was a constant fight for months, but by letting Walter Positive fight his own battles in hypnosis, the experiences of the victories over Walter Negative crept slowly into Walter's conscious personality so that Walter Positive became doubly stronger.

There were many differences between the two personalities. Walter Positive was rather tiresomely compulsive, but he had a great deal of strength and determination that Walter Negative did not have. On a Rorschach while still underactive (Bowers et al 1954) compared to the complete inertia that we had seen in Walter before, his energy and ambition seemed very striking and reassuring. Actually, Walter Positive was a more clearcut and complete personality on the Rorschach, with much more ego strength revealing objectively than Walter Negative or Walter conscious. The latter was a mixture of both Positive and Negative. Walter Negative was a weak, querulous, frightened, incomplete person who waited with foreboding for the end. He was angry, he hated, and showed many primary process thinking disorders.

But as Walter Positive became stronger and stronger, and as more and more of this personality was utilized by the conscious personality,

Walter himself became better. He became more confident, and more ambitious. He still needed a great deal of supportive therapy, but he was able to be discharged from the hospital in September, 1946. For six weeks thereafter the senior author stood by at the other end of the telephone. He had been able to secure a job singing at one of the smaller night-clubs in New York, and twice each evening he called her before each performance. She would tell him to relax more and more. He learned to hold onto the telephone receiver with his left hand while he went into a deep trance, and, slowly, his right arm would rise in the air. His right arm would become lighter and lighter, muscles rigid, fist clenched. Then she would say, "Against your will your right arm will fall and as it falls you will push out of your mind and body everything that belongs to Walter Negative. Your arm will not touch the couch until you have got rid of everything of Walter Negative." When his arm was down he would tell her. Then she would question him. "Is there anything of Walter Negative in your chest?" "No." "Anything of Walter Negative in your arms?" "No." "Anything of Walter Negative in your abdomen?" "No." "Anything of Walter Negative in your legs, your head, your mind?" "No." "You will not let Walter Negative come back into your mind or into your body. You will sing beautifully tonight. Your emotions will be strong and good. You will love people, you will make them happy, you will show them your feelings and they will be good. There is nothing in your way, it's all one. You're one with the sky and the trees and the sunshine, the happy people on the streets. You belong. It's all one, there is nothing in your way." And then, a few hours later, before the second performance we might or might not go through the whole routine again. It all depended upon how he felt. But always there was the constant reiteration that "it's all one," that one was not "different," that one was good and strong and happy, and one's singing was an expression of one's happiness and love of living.

During this time we also saw Walter for one hour a day at the hospital, giving him the same strong hypnotic suggestions, letting him sleep for twenty to thirty minutes in the hypnotic state. Because of his insistence, we permitted him after several days to leave the hospital in an open-eye waking trance, since he insisted that Walter Positive was his real self, and in this hypnotic state he was in better condition to cope with the reality of his life situation.

About a year after discharge Walter felt sick, dizzy and weak, and consulted a physician who hospitalized him with a diagnosis of a painless, bleeding gastric ulcer. Following blood transfusions and hospital care, he recovered rapidly in a period of several weeks. There had never been any suggestions for the relief of abdominal discomfort or pain in

hypnosis, and the patient had had no gastric symptoms in his hypochondriacal system. During his hospital stay he was continuously overwhelmed by the suggestions of illness from the other patients and from radio patent medicine commercials. He was given strong suggestion to pay no attention to such foreign suggestion and for the first time was permitted to use auto-suggestion to push away these thoughts of illness.

Even though it had been more than a year since discharge, we have wondered whether the rapid change in his economy resulting in his good social remission had been too severe, resulting in physical illness. It is important to note that gastric ulcer is rarely found concomitant with schizophrenia.

The senior author saw Walter privately sporadically since his discharge from the hospital. As the years went by he became stronger and stronger, but there were so many problems that she knew existed in the past that we had never talked about that she was never entirely secure with Walter's apparent good social remission. In October, 1948, a Rorschach study was done, two and one-half years post admission. The evaluation of the Rorschach follows:

"Interesting changes are revealed when the patient's conscious Rorschach record at the time of his admission is compared with one taken three months after therapy was started, and the present one, taken two and one-half years later.

Although the schizophrenic process was apparent, the second Rorschach, August 6, 1946, revealed movement in therapy. Walter appeared to be putting up an active struggle, rather than following his usual pattern of withdrawal. In addition, he was now able to establish some affective rapport with his environment, and he seemed to have developed some insight into his own psychological states. There was an increase in assertive human movement responses, though he probably still can satisfy these needs primarily in his fantasy life. Anxiety and tension associated with psychosexual conflicts were also quite marked. At this time he appears to be attempting to cover up his feelings of depression not only from others, but also from himself.

A more startling change is revealed in his latest protocol of October 2, 1948. Productivity is markedly increased (19R first record, 22 R to the second, 62 R the present) and the personality is definitely dilated. Not only has there been an increase in fantasy living, but in his emotional living as well. While his affect is very primitive (6C), he tends to displace his feelings, being afraid to manifest his deeper emotions when they do occur. Thus for the most part he expresses his emotions in a disguised manner or in situations which have no deep emotional significance for him. For example, his affection or reaction to the individual

who may stimulate his emotions will be disguised, but he will act with enthusiasm about impersonal matters such as heroes of books, stage characters, etc. It is also possible that many of his autistic fantasies have no driving force in his handling of reality because he may be able to act these out in his stage roles.

He appears to be extremely narcissistic and preoccupied with himself and in establishing a style of life. That is, he seems to be experimenting or trying to find an appropriate means of behavior, and there is still an obsessive inability to assume a consistent attitude towards others in his dealings with them. In spite of his conflicts, anxieties and tensions, however, he is managing to maintain control over his thinking processes and motor impulses. The ego appears to be holding together and it is likely that he is better able to utilize his obsessive-compulsive defenses.

While there is much activity, there is no adequate organization of plans. That is, there is ambition without goals and much of his effort seems to go into anxious daydreams and attempts at hiding his psychotic symptoms, for intellectual adaptivity and intellectual conformity to the group are still very low.

Psychosexual conflicts are still very much in evidence and these seem to relate in part to homosexual inclinations and in part to guilt associated with masturbatory practices. The strong oral component raises the speculation, among other things, that he may be preoccupied with fantasies of fellatio as a means of sexual gratification.

The picture, in spite of the changes, is still a schizophrenic one. He probably has many hypochondriacal complaints and experiences intermittent moods of depression and still clings to the habit of self-observation. What may be of great help to the patient is his ability to act out some of his autistic fantasies, and various conceptions of his role in life in his stage roles."

The therapeutic value of the utilization of the artistic defense mechanism in which the fantasy of the artist is projected so that the audience becomes a participating, responsive partner in the fantasy production had been emphasized from the beginning of treatment, and is manifest in the Rorschach protocol. It has long been known that it is easier to work with gifted schizophrenics, but we feel that too seldom do therapists make conscious and deliberate use of creative outlets for the inner fantasy world. The more the prelogical mind becomes capable of functioning in response to the outer world of reality, the healthier and better integrated the whole personality will become.

One day in 1951 Walter arrived at the senior author's office in a depression. Walter confessed that he had been jilted by a girl with whom

he had been deeply in love, and he felt that the reason for the jilting was his inadequacy as a man. The girl had complained about his lack of skill and endurance in sexual performance, and he felt that he was a failure. No woman would ever love him. We began to talk more of his actual problems. He confessed his premature ejaculations, then the fact that he had never been able to masturbate to the point of orgasm. The senior author became curious and asked him why it was he had never talked about the sexual trauma of his childhood. Walter looked blank. "Don't you remember all those drawings you did for us?" she asked. "What drawings?" he asked. "You mean those paintings?" "Oh," he said, "by the way, could I have that painting of the house with the wash hanging up? I always liked that." The senior author got the bound volume of the drawings that accompanied the paintings and handed them to him, saying, "Perhaps you'd like to look these over." "Do you mean to say I drew these?" he said when he had seen a few of them. It became clear then. Walter had done this work which consisted of hypnotic associations to the paintings he had done in occupational therapy in hypnotic mirror gazing and was amnesic about them although he had not been specifically so instructed. For five years he had faithfully been amnesic, but when they were shown to him he was under no further command not to remember. He read and studied them with avid interest. It opened up a whole part of his life that had been closed off. He was fascinated by the patterns that were revealed in his drawings and associations to them. When he saw how repetitiously he had talked of a time when, in imitation of his father he threw his own shoes out of the window as a child he was able to understand that this was one of the first of many times in his life when he had cut off his nose to spite his face. He had made himself a barrier in order to keep his father from enjoying his success. If Walter could not have what he wanted, no one else would have it either. He found illustration after illustration of how this pattern had been carried through. He talked for the first time of his fears of homosexual attraction and the fear he had of older men who in some way reminded him of his father. He talked about how he confused all men with his father, all women with his mother and sister. From this it followed that for him sex was a performance, just like singing. And since his pattern was never to perform as well, and certainly not better than others, sexual problems were wrapped up with his others. He realized that his pattern meant that if he performed sexually like a man he would perform as his father did, and that would mean raping and killing and torturing. If he cared for a girl, this was impossible for him. It was a totally new concept that to be a man was to be strong and gentle, and kind and good. He began to see that his father was a raging, angry little

terrier whose bark was far worse than his bite. After this session Walter made a trip out of town to visit his father. He came back with the surprising information that this ogre, this giant of a man was a tiny little shrunken senile pitiful wreck. Walter was several inches taller and could knock his father down with the flat of his hand. Walter began to understand that his father's pattern was not the pattern of all people, and that when he had been afraid at the age of three to kiss his mother for fear that he would injure her, he was already deeply possessed of the pattern that sex is something that is forbidden and bad. Sex maims and kills. This concept finally was brought under Walter's scrutiny, and he saw that there was another code by which he could live. He could still be a man, in his own eyes and the world's by being strong and good, by sharing himself freely with a woman and by mutuality in sex. We wish to stress the importance of removing the amnesia during treatment so that all the analytic-like experience is made available to the patient and can be used by him. Until the amnesia was lifted in Walter's case he was not able to profit by what he had remembered and done in hypnosis. The trauma remained unaltered and the understanding was withheld.

Following this intensive period of treatment which was several hours of treatment a week for three or four months, Walter's improvement became more marked. His depth of personality increased and the genuine warmth of his relationship with people gave us hope that more than a remission had been secured. He went into business and for a number of years continued to show a growth and maturity in his personality makeup. However, in 1955 he suffered a severe financial loss in business and was in reality attacked by hoodlums on a dark street, robbed and badly beaten up. Following this he gradually declined and became more and more withdrawn although neither he nor his family was aware of the seriousness of his regression, until again the blind bleeding ulcer occurred. This time he was cared for at home, and about a week after he had been confined at home in bed, he called the senior author in a panic, revealing severe anxiety. With the internist's cooperation, he was quieted with new tranquilizing drugs (Bowers et al., 1958) until his physical condition permitted his return to psychotherapy.

Throughout the previous ten years, the senior author had been concerned by the continuously positive transference which was always disturbingly impersonal, and she had difficulty in working through this positive transference. In this present psychotic episode the negative transference surfaced. The patient became coercive, demanding frequent sessions in order to be reassured of his obsessive-compulsive fears that he would be sued by people with whom he had been in a minor traffic accident, that he had gotten a girl pregnant with whom there had

been no intromission, etc. Although he was insistent in his demand for hypnotic support and persisted in saying that such support was of help, the senior author found that the quality of the personality in hypnosis was no longer the old Walter Positive, and seemed to be much the same as the conscious personality. After about three attempts, the senior author refused to do further hypnotic work since it was evident that the hostile transference was invading and making destructive the hypnotic rapport.

He became more and more openly hostile in a new and unpleasant way until finally, after about six weeks, the senior author felt unable to cope further with the situation and refused to see him, transferring him to the junior author who experienced similar difficulties and transferred him to another therapist. The panic and anxiety subsided in a few weeks, and the patient recovered from this episode with an increased vigor. He seems to have brought out of the psychotic episode a great deal of the latent aggression so that at the present time, a year later, he appears in every way to be stronger and healthier than at any previous time and once again is without apparent clinical evidence of schizophrenia in the ordinary sense. We feel that in the course of treatment of severe schizophrenics there should be less of a feeling of discouragement because of intervening psychotic episodes as they frequently seem to permit a new rearrangement of the personality constellation. Following successful treatment of the episode, the patient seems much improved over the preceding period of remission. We feel that it is not so important that the psychotic episode reoccurred, but that the base line of the severity of the episode was an indication of how much stronger the essential personality was. In this instance, although the patient was ill and a great trial and tribulation to his family and the senior author for a period of about two months, he was completely ambulatory, and was not hallucinated at any time. The senior author feels quite definitely that he was not committable unless such a commitment would have satisfied some hostile wish against his family. Throughout the episode there was a shrewdness and canniness which we felt indicated a consciousness of acting out a great deal of hostility in the pretense of anxiety and compulsiveness.

A current Rorschach has not been done since in the author's experience in doing serial Rorschachs on severe schizophrenic patients, the phenomenon of a clinical lag of at least a year would indicate that in all probability the patient is still showing a schizophrenic process on Rorschach at the present time.[2]

One cannot help but wonder what the age regressions would be like

[2] January 1961. The patient has continued in the excellent remission reported above without interruption to the present date.

if we repeated the experimental work of ten years ago. We have sufficient evidence of the validity of age regression to expect to recover the same ego state in an untreated patient. But what effect would ten years remission from the severity of the schizophrenic process have upon the ego state of the child? Would we still find the same schizophrenic child?

Summary

A single case of schizophrenia of many years duration has been both studied and treated by the use of hypnosis. Rorschach studies of the therapeutic process, age regressions, and the dual personality structure are reported. A successful social remission of more than ten years duration with an intervening psychotic episode is described. The salient features presented by this case report are: 1) Problems of inducing hypnosis in schizophrenic patients, 2) Age Regression in schizophrenic patients, 3) Techniques of psychotherapy with hypnosis, such as successfully reliving previous traumatic life experiences, and training in the relearning of emotional expression, 4) Undoing of distortions of perception, 5) The development of the identification with the schizophrenic parent, resulting in an incorporation of a dual personality structure, the "little me" concept, or the outside talker and the inside me, 6) Problems in the management of schizophrenic patients in the course of treatment with hypnosis.

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ON THE SIMILARITY BETWEEN HYPNOTIC AND MESCALINE HALLUCINATIONS

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The origins and symbolic significance of hallucinations have stimulated speculation for a long time. It is generally agreed that hallucination is a centrally initiated process manifesting neurological changes whose origins are not clearly established. The content of hallucinatory experience is sometimes devoid of symbolism, sometimes highly symbolic and just as often ambiguous with respect to symbolic meaning (Landis, 1950).

It has been reported that three prevalent tendencies characterize mescaline hallucinations: the appearance of (a) certain constant forms of which lattices, spirals, fretwork and arabesques seemed to be outstanding; (b) alterations in the number, size and shapes of the figures seen; and (c) changes in spatial and temporal relations of the content (Klüver, 1942).

During explorations of hypnotic phenomena several subjects reported visual images suggestive of those reported to occur in mescaline-induced hallucinations. One subject was able to render expression of her hypnotically-induced hallucinations in graphic form which, together with her related associations, formed the nucleus of this communication. It is believed that hypnotically-induced visual perceptions may be subsumed under the category of hallucination.

After the presentation of experimental methods, the findings which have been incorporated in a general outline of perception are offered in the discussion.

Procedure

Description of Subject: *S* was a young female about twenty-three years of age. She was 5′7″ and her weight was 115 lbs. On the basis of her personality problems she might be considered moderately neurotic. She was subject to periodic headaches which she named "migrainous;" her description of them seemed to warrant the designation. She also complained of a general dissatisfaction with her interpersonal relationships, but seemed to be successful in striving to complete her college education and in finding employment to augment her meager allowances. At the

time of this study she was a college senior. She was above average in intelligence.

Subject bore a dual relationship to *E*, both a patient and a subject. She had been apprised of the nature of the research and agreed to cooperate in the investigation of hypnosis. Of all the participants, she was the only one who received psychotherapeutic help.

S was initially ambivalent towards hypnosis but during every trial she responded to the point of experiencing a moderate "trance state" characterized by facilitation of the associative process and visual imagery, usually polychromatic and sharply defined. *S*'s attitude towards *E* at the time of this study was positive and it was quite clear that she wholly accepted *E* as an authority.

Method of Hypnotic Induction: *S*, seated in an armchair, was asked to close her eyes and visualize herself. When she announced that she had achieved an image of herself, she was instructed to begin to feel a heaviness in her arms and legs. This procedure usually resulted in the induction of a light hypnotic state which was found to be generally adequate for the purpose of recall of dreams and the evocation of visual imagery or perceptions. Her instructions were: "You will begin to feel completely relaxed and just as soon as you are, images and thoughts will present themselves to your mind."

Report of Hypnotic Perceptions during Hypnosis: "At first I saw an eye and now a tack. At first the tack was on a side and now it's standing up straight. There's a bright blue light; it sort of keeps jumping all around; it keeps on smashing against me. Like I'm looking through a cyclone or eye of a tornado. A beautiful flower, it's all red and shiny and sparkly; it's a fountain, and the fountain has such a spray."

S was then instructed to open her eyes and was asked whether she saw anything else. She replied, "I'm not sure, but I think I saw an acorn." She was then asked if she had any bodily sensations (*E* noticed during the hypnotic interlude, that *S*'s cheeks at the cheekbone reddened). *S* replied that her cheeks felt as if she were forcing a smile and that it felt as if all the blood had left her arms, especially her hands. "Like when you wake up in the morning and you can't make a fist. Right now I can't make a fist." *S* was asked which of the images was most vivid. She replied, "Flower, it looked like it was radiating its color." *S* was then asked to draw the images, using the appropriate colors and to write a complete account of her hypnotic experience including an interpretation of her imagery. She was asked whether she had any notions concerning the symbolism of eyes and answered vaguely that they might indicate her searching. However, inasmuch as in an earlier session she had reported visual imagery in which her eyes were emitting bullets, *E* offered

the hypothesis that eyes might symbolize aggression for her. (It might be noted that the essence of "searching" is also aggressive. With respect to *S*'s aggression, see footnote at the bottom of page 144). When seen a week later, she brought her paintings of the hypnotic images and a com-

FIG. 1. One of the eyes which materialized out of the gray mist

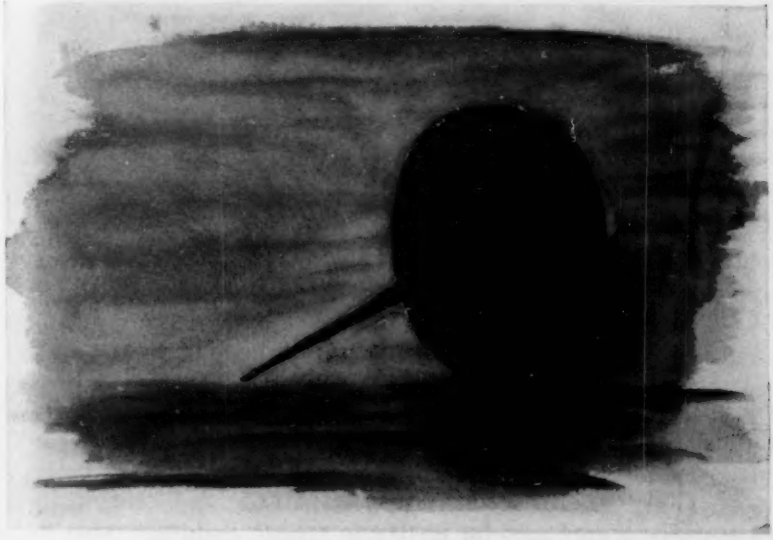

FIG. 2. Brown tack

FIG. 3. Blue light preceding the crystallization of figures 4, 5 & 6

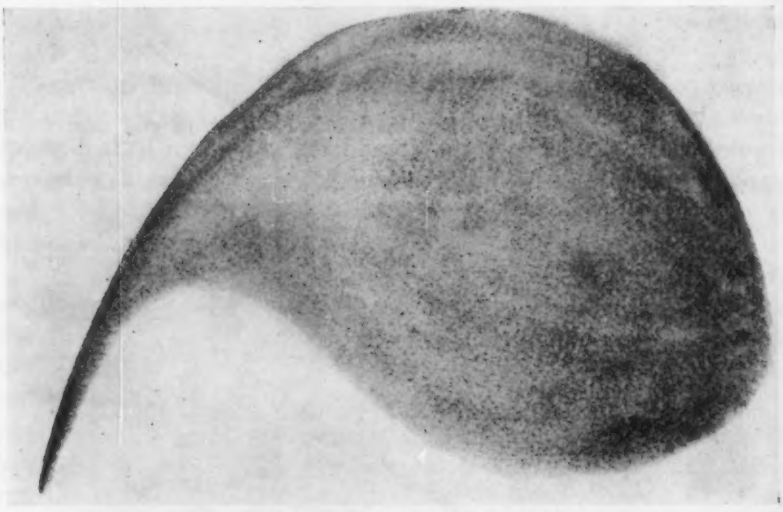

FIG. 4. Sun-shaped blue light with tail

plete introspective account, including her interpretations. (See figures 1 through 6).

S's Immediate Recollections of her Hypnotic Perceptions

"I searched a grey mist for images to appear. Suddenly misty forms became visible and I was able to see vague shapes of eyes. They seemed

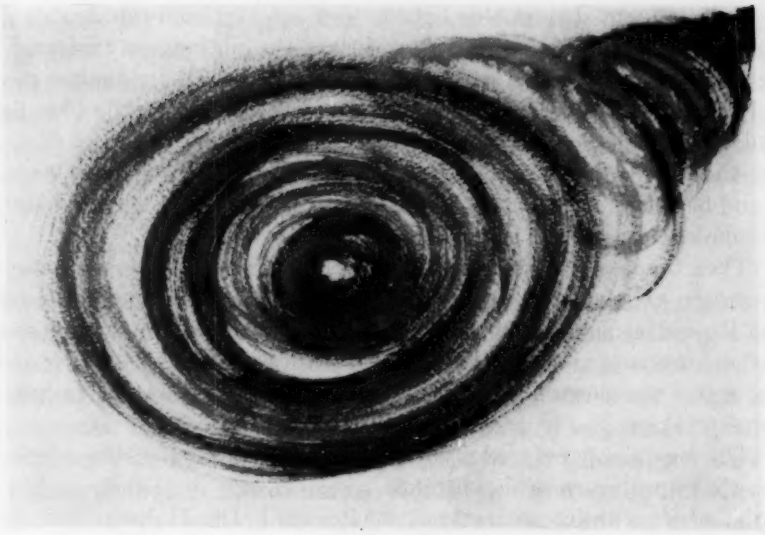

FIG. 5. Eye of tornado

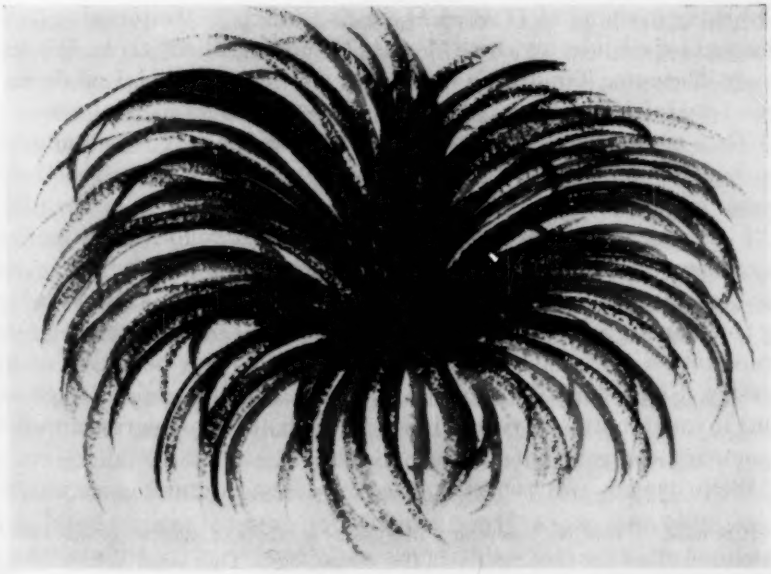

FIG. 6. Flower-Fountain

to float in space across my path of vision. These grey-colored visions of eyes were side views, but there was at least one full-face eye. They were never clear. The second image was fuzzy but slightly sharper. A brown tack lay in a horizontal position. The point faced to my left.

"A bright sun-shaped blue light moved quickly from side to side and out of my field of vision. It was so bright the edges were unclear. The light went at great speed when suddenly it began dashing against me as if I were a wall. While it pounded me again and again, the blue light took a comet shape (a long blue tail of light).

"Then suddenly I was looking at the eye of a hurricane from beneath it and beside it, simultaneously. It seemed very calm and almost static. Motionless except for a spiraling upward movement.

"Then the most beautiful thing happened. I saw a flower shimmering in orange, yellow and red iridescence. The petals were long and slender and the quivering made the iridescent quality more distinct. A close-up of the flower surprised me. It was a fountain with the sun shining on it. The water was flowing in very thin streams like a round, old-fashioned lawn sprinkler. The fountain turned light aqua blue.

"The fog quickly covered my vision but before all images disappeared, I saw a brown acorn in the distance."

S's subsequent interpretations: "Afterward, Dr. Halpern discussed with me the meaning of the eyes. They seem to be a symbol of aggression for me.[1] My homework was to figure out the images.

"Friday morning at 11:00 A.M. in English class, the meaning of the images popped into my mind. I wasn't thinking about them. We were busily discussing Turgenev's short story, 'The Live Relic'. I might have been bored. I jotted down what I thought the images meant.

"That night I went out to dinner with my fiance. I told him about the images and what I thought they meant.[2] This made them even clearer in my mind.

"I started with eyes meaning aggression and followed the pattern along these lines. I decided the tack, a sharp object, meant that aggression was painful to me. The blue light revealed pent-up aggression trying to escape. The hurricane appeared to be my aggression trying to be forced into a controlled form. The flower unfolded a new kind of aggression. I gave birth to normal aggression. It now escaped (the fountain) in quiet, normal rivulets. I now have an acorn of aggression which is compact, controlled and of normal size.

"While typing this report I discovered my interpretation was in-

[1] It is unlikely that *S*'s acceptance of eyes as symbols of aggression was merely intended to please the therapist. Note the phraseology, "They seem to be a symbol of aggression for me." She did not assert that they are symbols of aggression. *S* was well aware of being quite a competitive individual and there is no question but that the wholesome channeling of her aggressive impulses was one of her major problems.

[2] It is possible that the recounting of her hallucinatory experience to her fiance was an expression of resistance to a larger insight.

correct. Let's say I'm aware of an alternate meaning. The hurricane was the clue. Despite the fact that my image was motionless, hurricanes are uncontrollable winds. Therefore, it must mean my aggression became so wild it was uncontrollable. The flower meant a new thing happened to the aggression. It escaped (the fountain) even though I tried to keep it inside. This disturbed me so I tried to control it and hid it deeper. I drew a tighter rein on it (acorn)."

Discussion

It would appear that the neurophysiological bias of some investigators with regard to hallucination often precludes or minimizes the role of psychodynamic processes (Landis, 1950). If perception is considered a function of consciousness it follows that a disturbance or alteration in consciousness would engender concomitant changes in perception and its corollary that a disturbance in perception would bring about a corresponding change in consciousness. Consciousness may be influenced psychologically as well as neurologically. It is well known that both drugs and psychodynamic processes, including hypnosis, produce alterations in consciousness. An investigation of the phenomena of hallucination as a special problem in perception has significant neuropsychological implications and should contribute to the clarification of the psychosomatic question. The contributions of both neurophysiology and psychology must be considered if an adequate understanding of hallucination is to be achieved. The argument may be analyzed according to the principles of form and content. The data of neurophysiology answers questions of form whereas the data of psychodynamics answers questions of content. To resolve the riddle of form and content by reducing one to the other would seem to provide an absurd solution. It is hoped that this discussion will serve to balance the biochemical evidence with pertinent psychological findings and elucidate the nature of this riddle.

An examination of *S*'s drawings showed the kaleidoscopic nature of her hypnotic percepts (hallucinations). Furthermore, they bore a marked similarity to mescaline hallucinations with respect to their geometric, chromatic and spatiotemporal qualities (Klüver, 1942). Klüver has adduced evidence to support his contention that mescaline hallucinations are qualitatively different from psychically-induced hallucinations and argues against a psychodynamic interpretation. While he does not deny the possibility of symbolic meaning, the consistent appearance of forms such as lattices, spirals, fretwork and arabesques, varying in number, size and shape and changing in spatiotemporal sequences is construed by him to indicate the workings of specific biochemical proc-

esses. What Klüver considers specific for mescaline hallucinations appears to occur in varying degrees in non-mescaline induced hallucinations. Klüver's descriptions of mescaline states suggest impairment of body image. More specifically, some subjects report the feeling of merging with and emerging from the hallucinatory images. It is likely that the effect of the drug is to interrupt the orderly integration of the various sensory processes.

The body image is considered by some theorists as a nuclear component of ego (Schilder, 1935). It is well known that intense and prolonged hypnotic states can produce varying degrees of body image disturbances rivalling those produced more rapidly by such toxic agents as mescaline. In other words, two avenues for inducing changes in perceptual processes via disturbance of ego functions (body image) are possible—the biochemical and psychological.

With respect to content, the psychodynamic nature of *S*'s hallucinations was corroborated by the coherent symbolic interpretation which she presented. While it is not within the purview of this communication to digress into speculations about the psychodynamic aspects of these percepts, some comments are noteworthy. An evaluation of her accounts reveals an unfolding of insight into the nature of her conflicts which were perceptualized during hypnosis. Her interpretations apparently stopped short of a fuller understanding, which might be explained as being due to her resistance. It will be recalled that *S*'s interpretations centered about her difficulty in expressing aggression. With respect to her eyes being a symbol of aggression it should be noted that during previous hypnotic perceptions her visual imagery included percepts of herself in which bullets were emanating from her eyes. This, incidentally, is consistent with the folklore concerning eyes as being instruments of aggression. It was felt that her hypnotic percepts were a perceptual expression of her oedipal conflict. This interpretation represents an analytic evaluation of the cumulative therapeutic interviews.

Two weeks later *S* announced that she had associated the blue oval light with her father's eyes, thus corroborating the psychodynamic interpretation of her percepts. It will be further recalled that *S*'s descriptions of her hypnotic percepts underwent successive elaborations. Her account during hypnosis was relatively brief and her successive accounts were increasingly detailed, which would imply that changes in ego functioning are sustained during hypnosis. As an individual oscillates between wakefulness and sleep, the perceptual functions of ego fluctuate concomitantly. Hypnosis as a modified conscious state also produces changes in perceptual process which are complicated by the hypnotic interaction. The same pattern of mnemonic restructuring, pro-

ceeding from a nuclear account during hypnosis to an elaborate account during the waking state, has been noted by the author in previous studies. This problem of memory has been of historic interest to psychologists and has recently received systematic attention with respect to hypnosis (Reiff and Scheerer, 1959).

The question is raised whether *S*'s successive accounts designate veridical experiences or represent post-hoc associative embellishments. It is felt that this question may only be answered with respect to the particular subject. The hypnotic interaction, as interpreted by the hypnotist, provides the only basis for deriving a valid answer. It is felt that *S*'s hypermnesia was for her hypnotic perceptions and did not entail related pre- or post-hypnotic experiences.

Kline (1958) postulated that the hypnotic state represents a regression to a more simple and basic form of perceptual organization and response. Brain (1951) asserted that perceptions are symbolic transformations of sensory events which are appropriately projected on to the environment (intra and extra organismic). Percepts are subsequently transformed into concepts. If the views of both Kline and Brain are accepted, a generalization concerning perception which will embrace hypnosis may be accomplished.

Let us posit a perceptual-conceptual reciprocity; sensory symbols of the first order (percepts) interact with non-sensory symbols of the second order (concepts)—developmentally perception always precedes conception. Let us further posit this reciprocity as a dependent neuropsychological function of consciousness. Psychodynamic theory conceives consciousness as a function or apparatus in the service of the ego which permits the ego to view objectively internal as well as external events (Rapaport, 1951). Consciousness may be further construed as an adaptive process subserving the purposiveness of the ego. In Rapaport's analogy, consciousness as a superordinate sensory organ would coordinate the perceptual-conceptual reciprocity which may be considered as the cognitive process of the ego. Consciousness is also postulated as a precondition for being (Jung, 1959). Without consciousness man is reduced to a reflex apparatus. Thus the neurological and psychodynamic postulates may be synthesized into a larger conceptualization. In terms of our postulates, the process of perceptualization during hypnosis may be understood as designating a transformation of second order nonsensory symbols (concepts) into first order sensory symbols (percepts) achieved as a consequence of the alteration of consciousness and permitting, through the discharge of appropriate affect, a fuller integrated response. This hypothetical capacity of the ego to selectively suspend perceptual functions (regression in the service of the ego) has been re-

viewed and advanced as a contribution to the theory of hypnosis (Bellak, 1955).

In the light of our assumptions concerning the symbolic nature of the perceptual-conceptual reciprocity, the question whether hallucinations, which after all are percepts, have symbolic significance seems meaningless. The question might be more adequately framed as follows: What are the conative and affective components of hallucinations? If the purposive nature of the human organism is accepted, it must follow that conative and affective components exert determinative influences in perception.

What has been stated above about perception in general and hallucination in particular may easily be extended to include other modes of perceiving, such as dreaming and imagining. All of these processes subserve reality testing and share in common a perceptual-conceptual reciprocity. They are differentiated by the perceiver on the basis of the concomitant activity of consciousness and determined by appropriate psychodynamic processes.

Summary and Conclusions

This communication presented and discussed a series of related hypnotically-induced visual percepts experienced and drawn by one subject. The percepts were chromatic, abstract, and bore a close resemblance to mescaline hallucinations. They were given a psychodynamic interpretation by the subject. It was further argued that there is no essential qualitative difference between psychogenic and toxicogenic hallucinations. The major difference was resolved in terms of extent of impairment of body image which was considered as a nuclear ego function. Alterations in perceptual processes, exemplified by hallucinations, were explained in terms of perceptual-conceptual reciprocity understood as a neuropsychological function of consciousness. It was hypothesized that all perceptions including dreaming, hallucinating, imagining and hypnotic perceiving may be likewise explained.

The relationship between toxicogenic and psychogenic perceptual problems may be clarified by further studies of subjects under conditions of hypnosis and hallucinogenic drugs.

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SUBJECT CHARACTERISTICS IN HYPNOSIS RESEARCH: PART I A SURVEY OF EXPERIENCE, INTEREST, AND OPINION

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A number of studies have attempted to describe some of the differences between volunteers and nonvolunteers for psychological experiments, but only two (Martin and Marcuse, 1957 and 1958) specifically aimed at the characteristics of *potential* subjects for hypnosis research. The latter discovered differences in intelligence, anxiety, and some other variables between volunteers and nonvolunteers, generally presenting a more favorable psychological picture of the former.

The study of volunteer characteristics has manifold importance for hypnosis research for two reasons: (a) Generalizations about the distribution of hypnotic susceptibility in the population cannot be valid unless they account for that segment of the population that does not wish to undergo hypnosis. (b) Differences in the characteristics of people who are willing or unwilling to be hypnotized may be critical variables in the analysis of the nature of hypnosis.

There seems to be a particular lack of research concerning the distribution of attitudes and experiences related to hypnosis in the general population as well as in specific subgroups. Are people's attitudes towards hypnosis related to their direct or vicarious experiences with it? To significant personality variables? To their susceptibility? Prior experience with hypnosis, either direct or vicarious, might create expectations in the subject which would influence his later performance in hypnosis (viz., Orne, 1959); unknown personality characteristics might influence one's willingness to be a subject and might account for variabilities of performance between subjects; susceptibility itself may be a partial function of attitudes and opinions about hypnosis.

The present study, part of a larger study still in progress, reports on the distribution of responses among a large group of college students to a questionnaire dealing with some of the foregoing variables.

[1] I wish to thank Miss Marion Banish of Columbia University, Department of Sociology, for her aid in designing and conducting this survey and in preparing the data for presentation.

Procedure

Open-ended interviews were conducted with some 35 students at undergraduate residence houses at the University of Illinois to explore their opinions, concerns, and experiences about hypnosis. Probes were inserted by the interviewer whenever necessary to get students to elaborate on their experiences and detail their opinions. Based on the records of these pilot interviews, a structured questionnaire was composed.

The questionnaire consisted essentially of two parts. In the first, respondents were asked to indicate whether, and under what circumstances, they had ever been hypnotized or seen anyone else hypnotized, whether and under what circumstances they would like to be hypnotized, and whether or not they felt they were very susceptible to hypnosis.

The second part of the questionnaire presents sixteen statements about hypnosis. Respondents are asked to mark each item True or False, first in terms of their personal opinion, and then once again in terms of what they see as the opinion of the general public.

Many of these items were intentionally ambiguous and, as stated, had no "correct" answers; they were meant to assess the *direction of popular prejudices* rather than the *accuracy* of people's knowledge.

The completed questionnaire was administered on one day to six-hundred-forty-five (645) students in introductory Psychology courses; these included 357 males and 288 females, ranging in age from 17 to 49. The bulk of the sample (76%) ranged from 18 through 20, with 19 as the modal age for both boys and girls. The 18–20 year range includes 89% of all girls however, but only 63% of boys; an additional 35% of boys are represented in the 21–28 year range.

Experience with Hypnosis

The number of students who had been previously hypnotized is surprisingly low. Twenty-seven males and seventeen females, or 6.8% of the total sample, had been hypnotized. Professional personnel, moreover, had functioned as hypnotists in only nine of these forty-four cases, and all but one of the rest had been hypnotized for entertainment purposes. None of the respondents reported unpleasant after-effects, and twelve said that they felt quite pleasant after their experience.

Those who had seen someone else hypnotized, in contrast to those who had had the experience themselves, comprised almost sixty per cent of the total, that is, 386 people, about evenly divided in proportion for boys and girls. Entertainment was again the main circum-

stance of hypnosis, accounting for 79% of all the instances students had observed. Almost twice as many students had seen a non-professional induce the trance as had seen a professional person do so. With respect to the after-effects they had observed, one third of the respondents thought that the subject had not remembered what happened, 16% felt that the subject had found the experience pleasant, 18% felt he had found it neither pleasant nor unpleasant, and only 3% reported that he had found it unpleasant.

In summary, very few respondents had ever been hypnotized, but the majority have seen hypnosis—in both cases, the main purpose of the experience was entertainment, and it was generally conducted by non-professional personnel. Insofar as subjective reactions of unpleasantness reflect harmful after-effects, these seem to have been at a minimum. What is striking about the foregoing from the viewpoint of the clinician is its implication that hypnosis has wide public acceptance as an *entertainment medium*, and that there is little concern, at least among college students, about harmful effects which would necessitate some special expertise on the part of the operator. Noteworthy to the experimentalist is the fact that there is sufficiently wide knowledge of what it looks like to be hypnotized so that the responses of experimental subjects to the hypnotic state are likely to be considerably colored by their expectations of how a hypnotized person acts. The extent of such information is perhaps best reflected in the remark of a five-year old experimental subject to this author: "You're trying to hypnotize me. I saw that on Huckleberry Hound. Dixie and Pixie hypnotized Jinx the cat, and they made him think he was a dog and that he was a mouse."

Interest in Being Subjects

Desire to be Hypnotized

Respondents were asked to indicate whether they would like to be hypnotized "just for the sake of having the experience" and/or "as subjects in an experiment." These were not treated as exclusive categories, and those who responded positively to the former were expected to respond positively to the latter.

Fifty-two per cent of the total indicated that they would like to be hypnotized just for the sake of the experience, while 45% said that they would not like to be hypnotized on that basis. Positive responses were divided into "Yes" and "Very Eager." Almost 40% of the total sample responded in the former category, while almost 13% responded in the latter. An interesting difference between boys and girls ap-

pears here, in that while 42% of boys and 41% of girls answer "yes," 16% of boys and only 8% of girls fall into the "very eager" category. The distribution of combined positive responses by sex then, is 58% for boys and 49%* for girls. This difference is accounted for almost entirely by the "very eager" category, which is chosen by proportionately twice as many boys as girls.

It seems to make a slightly favorable difference, moreover, if the hypnotic experience is part of a scientific experiment. In that case, "yes" responses remain substantially the same, 40% for boys, 42% for girls, and 41% for the total, but "very eager" responses increase to 20% for boys and to 10% for girls, with the total 16%, while "no" responses drop from 41% to 39% for boys, from 50% to 48% for girls, and from 45% to 43% for the total. In other words, 57% of the total are willing to be hypnotized for an experiment, as opposed to 52% for the sake of the experience, and the change moves in the direction of a slight drop in "no" responses and a slight increase in "very eager" responses. The proportionate differences between boys and girls for all categories remain about the same.

It is apparent from the foregoing that girls are somewhat less willing than boys to be hypnotic subjects, regardless of the alleged purpose for which they are to be hypnotized. This finding may reflect a cultural pattern in which it is more acceptable for boys to be venturesome and daring than for girls.

Group vs. Individual Hypnosis

Of those willing to be subjects, 55% indicated no preference for either group or individual hypnosis, 36% preferred individual sessions, and only 9% stated a preference for group hypnosis. There are no substantial differences in the proportionate preferences of boys and girls.

Estimates of Susceptibility

With all subjects reporting, 25% of respondents felt they could be easily hypnotized, 26% felt they could not be easily hypnotized, and 49% were doubtful about their susceptibility. Again, there are no substantive differences in the proportionate responses of boys and girls. Considering the relative proportions of subjects in the general population which are thought to be very susceptible and very refractory to hypnosis, as opposed to those who manifest limited susceptibility (Hil-

* The asterisk throughout this article, refers to differences between proportions significant at or beyond $p = .05$.

gard, et al., 1959), one wonders, from the responses above, if expectancy may not be a very significant factor in hypnotizability.

Male vs. Female Hypnotist

Seventy-one per cent of all subjects, proportionately distributed among boys and girls, reported no preference for a male or a female hypnotist; 20% of the total preferred a male and only 8% a female. Among boys, however, 17% preferred a male and 10% a female hypnotist, whereas 25% of girls preferred a male and only 4% a female. The fact that when preferences are expressed, males are preferred two-and-a-half times as often as females, fits the general stereotype of hypnotists as men. The relatively greater preferences, however, of girls for a male hypnotist and boys for a female hypnotist, though not significant, may suggest that other factors, perhaps sexual ones, play a part in this selection.

Attitudes towards Hypnosis

On the True-False questions, students were asked to compare their own notions about hypnosis with those which they felt are entertained by the general public. The percentages which follow, rounded to the nearest whole number, are based only on the responses of those who reported *both* their own opinion and their estimates of public opinion. For no item, however, were there fewer than 610 out of a possible 645 responses. It should be borne in mind, moreover, that since a "Don't know" alternative is not permitted respondents, it can be assumed that where a student disagrees with the "public," he considers himself more knowledgeable.

Statements are presented in their order of appearance on the questionnaire.

1. *People can be hypnotized against their will.*

Eighty-six per cent of respondents, proportionately distributed among boys and girls, disagreed with the foregoing statement, and the majority (65%) also felt that the public would disagree. Thirty-four per cent of all those students who disagreed with the item personally, however, felt that the public would find it true.

2. *The more gullible people are, the more easily they can be hypnotized.*

A majority (63%) of both boys and girls deny any positive relationship between gullibility and susceptibility, but a larger majority (77%) sees the public as affirming that such a relationship exists.

Sixty-four per cent of all respondents who personally disagreed with the item also felt that the public would find it true. A majority of those who reject the statement thus feels that the general public is misinformed with respect to this issue.

3. *Strong-willed or independent-minded people do not make good hypnotic subjects.*

As might be suspected, responses to this item are consistent with those made to the preceding statement. Fifty-eight per cent of students regard the statement as false, and 78% feel that the public would find it true. Here, 69% of all students who personally disagree think that the public would give an affirmative response. The belief that strong will is negatively related to susceptibility is probably a reflection of the idea that hypnosis involves a surrender of the subject to the operator.

4. *Once people are hypnotized, they lose control over themselves, so that they will do or say things that they would normally restrain.*

A total of 59% of our subjects reject this statement, but there is a significant difference in the relative proportions of boys and girls, 66% of boys reject the statement as false, but girls are almost evenly divided in their opinion, with only 51% rejecting the statement. The relatively more common concern about loss of control which may be indicated here on the part of girls might well explain the significant sex differences indicated earlier with respect to willingness to volunteer as a hypnotic subject. The disparity between boys and girls is still apparent, though smaller, in their estimates of public opinion for this item. Seventy-six per cent of boys, 82% of girls, and 79% of the total feel that the public would find the statement true. Again, 68% of those students who rate the item false in their own opinion (i.e., 40% of *all* students) feel that the public would think it true; this figure includes 43% of *all* boys and 35% of *all* girls, whereas 33% of *all* boys and 47% of *all* girls find themselves in agreement with the public that the statement is true.

5. *In hypnosis, a person will not act in an unusual way unless the hypnotist suggests it.*

Eighty-nine per cent of respondents, proportionately divided by sex, agree with this statement, and 76% feel that the public would agree. This item serves to qualify item 4 and suggests that loss of control becomes an issue more as a result of the operator's demands than as a spontaneous occurrence. The possibility that some subjects, especially girls, are concerned about *spontaneous* loss of control is not,

however, contra-indicated by these data, and indeed this fear was frequently mentioned in our pilot interviews as one reason for preferring individual rather than group hypnotic sessions.

6. *It is difficult for a hypnotized person to resist obeying a hypnotic suggestion.*

As might be expected from the foregoing, a preponderant majority (81%) agree with this statement, and 93% of respondents feel that the public would likewise agree. Again, however, a significant difference obtains between boys and girls; 77% of the former and 85% of the latter mark the item true. This difference is consistent with previous indications that the issue of maintaining control over one's own behavior is somewhat more likely to be of concern to girls than to boys.

7. *People usually forget what happened during the trance as soon as they wake up from it.*

Seventy-four per cent of students agree personally with this item and 93% feel that the public would agree as well. Proportions are about equally divided among boys and girls.

8. *Hypnosis is an unconscious state, so hypnotized people are not aware of what they are doing during the trance.*

Fifty-six per cent of all respondents agree with this statement, and 89% feel the public would agree, but a significantly larger proportion of girls (61%) than boys (52%) personally affirm the statement. This difference lies in the same direction as those in statements 4. and 6.; a lack of awareness of one's acts is tantamount to a lack of control over them and helps make it possible for another person to control them. A total of 78% of all students who disagree personally (i.e., 35% of *all* students) think that the public would find the statement true; this figure includes 40% of *all* boys and 28% of *all* girls.

9. *After they come out of a trance, people will ordinarily remember what has happened unless the hypnotist suggested that they forget.*

In contrast to item 7, only 52% of respondents, proportionate among sexes, agree with this item, and only 42%, including a significantly larger proportion of boys (45%) than of girls (38%), feel that the public would agree. A large minority of respondents obviously feel that spontaneous amnesia is intrinsic to the experience of hypnosis and a large majority feel that some form of amnesia is to be expected as a result of hypnosis.

10. *One of the real dangers of hypnosis is that disturbing unconscious material may spontaneously come out into the open to upset or unbalance the subject.*

Fifty-eight per cent of the total sample, in about equal proportions of boys and girls, deny this statement, but 71% feel that the public would agree with it. Sixty-two per cent of all students who disagree, moreover, feel that the public would agree with the statement. The majority opinion in this instance may reflect a general tendency on the part of students to deny that there is any danger to hypnosis. It is interesting to note, in this connection, that the proportions of students willing to volunteer as subjects is about the same as that of students who reject the possibility of this particular danger.

11. *A real danger of hypnosis is that it may be impossible to get some people out of the trance.*

In contrast to item 10, this statement is unequivocally false. Seventy-two per cent of students, including 75% of boys and 69% of girls, disagree with the statement, but 66%, including 63% of boys and 69% of girls, feel that the public would agree with it. Sixty per cent of students who rate the statement false feel that the public would agree with it. The differences between sexes, though not significant in this instance, are again suggestive of the somewhat more widespread concern of girls over undesirable consequences of hypnosis.

12. *Hypnotized people do not have their usual mental discrimination abilities, so they tend to believe everything the hypnotist says.*

Fifty-four per cent of all subjects, including 52% of boys and 56% of girls, agree with this statement, and 85% of students, proportionate among sexes, feel that the public would agree. A total of 32% of all respondents, including 36% of boys and 28% of girls, disagree with the statement personally but feel that the public would affirm it; all told, 70% of students who disagree with the statement themselves feel that the public would agree with it.

13. *In hypnosis, people are so receptive to the things the hypnotist tells them, that he can permanently change some of their attitudes.*

Eighty per cent of respondents, proportionate among sexes, disagree, but 60% feel that the public would consider the item true. Forty-four per cent of all students, including 46% of boys and 41% of girls, personally disagree with the statement but also feel that the public would agree with it.

14. *If a person repeatedly experiences hypnosis, they become generally more suggestible people.*

Seventy-three per cent of respondents, including 69% of boys and 78% of girls, reject this statement, whereas 53%, including 58% of boys and 45% of girls, feel that the public would agree with it. The highly significant differences between boys and girls seem to run contrary, in this instance, to the general trend of sex differences observed for other items. The meaning of this apparent reversal is not clear to me, but it may imply that another factor than concern over loss of control accounts for proportionate differences in attitudes towards hypnosis between the sexes.

15. *In hypnosis, people have physical abilities which exceed their normal powers.*

Fifty-five per cent of all subjects, proportionate among sexes, disagree with this statement, but 68% feel that the public would agree.

16. *In hypnosis, people have greater mental abilities than ordinarily, so that they can learn more easily and quickly than usual.*

In contrast to the previous item, 72% of respondents, including 68% of boys and 77% of girls, deny this statement, and 63% of the total, including 68% of boys and 54% of girls, feel that the public would consider it true. Apparently it is easier to entertain the notion that one's physical abilities can be manipulated than that one's mental abilities can be, even when the manipulations are favorable, and this feeling is significantly more widespread among girls than among boys. As in item 14, the sex differences seem to run contrary to the general trend, perhaps further supporting the notion that more than a single factor must be invoked to account for differences between the attitudes of boys and girls.

Viewing the sixteen items as a whole, it seems quite apparent that in some respects boys and girls represent different populations of attitudes towards hypnosis, especially for items which reflect the notion that subjects may not act of their own volition when hypnotized. Significant differences between sexes obtained for five of the sixteen items. It is very unlikely that this is a chance result. These are differences of degree, however, rather than of kind—in no case do the opinions of boys and girls really contradict each other. The direction of their opinions is generally the same; where a majority of one sex regard an item as True, the majority of the other sex also regards it as True, even though a significantly larger proportion of responses may be represented for one group than for the other.

As for differences between personal opinion and estimates of public opinion, moreover, boys and girls also move in the same direction. In other words, the personal opinions expressed by girls over the range of sixteen items are not significantly more or less different from their views of public opinion than are those of boys. In summary, therefore, it is appropriate to discuss the personal opinions of all students and their estimates of public opinion without continued attention to differences between the sexes.

The personal opinions of student respondents tend to be quite definite. On eight of the sixteen items, there is more than 70% agreement (Items 1., 5., 6., 7., 11., 13., 14., 16.) and for only one item (9.) is there a truly even division of opinion ($C \geqq .95$). For only six items, moreover, do the majority of students find themselves in agreement with what they consider to be public opinion (1., 5., 6., 7., 8., 12.). More often than not, students tend to personally disbelieve the allegations of the items and to see the public as accepting them. This is best demonstrated by the proportions of all students who see themselves in disagreement with the public. For all sixteen items, anywhere from 16–49% of students see themselves as differing from the public *in either direction*. Even for those six items where the majority opinion is the same for self and public, from 16–38% of students see themselves in disagreement with the public on any given item, with a mean of 28% of students disagreeing. For those eight items where majority opinions of students and public actually run counter to each other, from 29–49% of students see themselves as disagreeing with the public on any given item, with a mean of 42% of students disagreeing. Almost all of the difference which students see between self and public, moreover, on almost every item, represents a situation in which the student personally regards the item as false but feels that the public would rate it true.

A clear majority of students ($C \geqq .95$) rated only five items True (5., 6., 7., 8., 12.) and all the others except 9. as False. A majority of students also saw the public as rating all but three items True (1., 9., 14.), and only two of those not rated True were considered False (1., 9.) rather than evenly divided (14.).

The majority of items were apparently seen by the students to affirm common stereotypes concerning hypnosis. If so, it is understandable that they should see the public as supporting these stereotypes (which after all, originate with the public), and see themselves, as more sophisticated judges, in disagreement with them. While "expert" opinion, for most items, would probably side more with the students than with the "public," it is questionable whether the personal opinions of the students represent any real knowledgeability about hypnosis, especially

in the light of their lack of experience with it. More likely, the opinions of students about hypnosis reflects a general kind of liberalism which students would apply to any subject which shared the qualities of potential romance, mystery, and the mere hint of danger that historically characterizes hypnosis. When one considers, too, that hypnosis also tends to be viewed by them as a useful medical tool and their participation in it justified as "part of a serious scientific experiment" it is all the more understandable that they should wish to see it in a generally favorable light as a mysterious, intriguing, but essentially harmless and temporary experience.

The data which resulted from the survey cannot by itself, of course, yield information about the relationships between attitudes towards hypnosis, experiences with it, susceptibility and personality characteristics; further material representing intercorrelations of questionnaire items with each other and with several personality scales is now in preparation, together with studies which attempt to relate directly the data of this survey to hypnotic susceptibility and behavior.

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THE PERFORMANCE OF ACUTE AND CHRONIC SCHIZOPHRENIC PATIENTS ON A TEST MEASURING SUSCEPTIBILITY TO HYPNOSIS[1,2]

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The use of hypnotherapy in the treatment of schizophrenia has not been extensive although Bowers (1961) who has recently advanced a rationale for its use with this disorder, considers hypnosis as a therapeutic approach to the treatment of schizophrenia which "has been used since antiquity." Bellak and Blaustein (1958), however, make no mention of this form of psychotherapy in their review of general psychotherapeutic methods for the treatment of schizophrenia.

One reason for this situation could be that the induction of the hypnotic state may not be considered therapeutic or even necessary. King (1957) who has compared the symptoms of schizophrenia with those of the hypnotic state, has advanced the thesis that the mechanism of schizophrenic symptom formation is analogous to the induction of hypnosis. A second reason may be that the usual induction procedures unless they are modified are not as effective with this type of patient as they are with normals (Wilson, Cormen, and Cole, 1949). A further reason could be that psychotics as a group are less suggestible than normals when standard methods are used for giving suggestions. This is the conclusion of one reviewer (Weitzenhoffer, 1953). The evidence, however, for this conclusion is not conclusive. Williams (1932) and later Bartlett (1944) found differences between the paranoid and the catatonic schizophrenic on the postural sway test. These investigators report that on this test there was no difference between the normal and the paranoid but that there was a difference between the catatonic and the normal. Some catatonics showed negative suggestibility whereas normals did not, and a large proportion showed no response.

The purpose of this study was to investigate further the suggestibil-

[1] This paper is based upon a report presented at the Twelfth Annual Meeting of the Society for Clinical & Experimental Hypnosis, October 6-7, 1960, Washington, D.C.

[2] This report is submitted with the approval of the Chief Medical Director, Veterans Administration, Washington, D.C. The opinions expressed here are those of the author and not of the Veterans Administration.

ity of schizophrenics by using a different basis for classifying these subjects. Since it is possible to classify schizophrenics on the basis of the length of time each has been hospitalized this gross classification was used and those who had just been admitted for treatment were compared with those who had been hospitalized for a period of over one year. Both of these groups were then compared with a group of normals. The basis for the comparisons of the groups was the performance of each on a test of suggestibility which has been shown to have validity in predicting hypnotizability (Furneaux, 1952)—namely the Body-Sway Test (Hull, 1933).

Method

THE TEST

The Body-Sway Test was introduced to the subject as a test to see how steady he could stand. The test consisted of two parts: a control period lasting 15 seconds and a test period lasting 2½ minutes. During both parts the subject stood with his hands to his sides, heels and toes together, and eyes closed. The experimenter stood in front of the subject.

During the control period he was told to stand as steady as he could. At the end of 15 seconds he was told that the examination would continue and should he lose his balance he would be caught. During the test period which followed immediately he was told the following: "Soon you will begin to feel that you are falling, falling forward, forward all of the time, forward." At the end of each 15 sec. interval thereafter, he was told: "You are falling forward, forward, all of the time forward."

SUBJECTS

All subjects were male veterans under 50 years of age hospitalized in VA hospitals. One group of 30 subjects (acute group) were patients with the diagnosis of schizophrenia who had just been admitted to the hospital for treatment. All of these subjects were examined during the first week after admission and prior to the administration of chemotherapy. The median age of these subjects was 33 years, 6 months. The second group consisted of 45 subjects who were patients with primary diagnosis of schizophrenia who had been continuously hospitalized for a period of 1 year or more (the chronic group). The median age of these subjects was 36 years, 2 months, and the median length of hospitalization was 6 years, 7 months. All of these subjects had had some form of chemotherapy during their hospitalization and most of them were at the time of the experiment receiving some form of maintenance chemotherapy. The normal group consisted of 30 patients in a tuber-

TABLE 1

Percentage of Subjects Receiving Maximum Score, by Group

Group	N	Percentage
Normals	30	20
Acute schizophrenic	30	33
Chronic schizophrenic	45	13
Total	105	21

culosis ward who did not have, from the record, a history which included a psychiatric diagnosis. The median age of the subjects in the normal group was 35 years.

Results

The comparisons made are those based upon the percentage of subjects in each group whose score on the test was the maximum score possible, namely that score which represented the loss of balance during the test period. Table 1 shows these data for the several groups.

When each group is compared with the other two groups, the only difference which is statistically significant ($P < .05$) is that which reflects the greater suggestibility of the acute group in comparison with the chronic group. While the chronic group showed the lowest percentage of maximum scores the difference between that group and the normal group did not reach statistical significance. The conclusion is, therefore, that the acute schizophrenics are more suggestible than are the chronics.

The greater suggestibility shown by the acute schizophrenic group raises the question as to what extent situational factors account for this difference. It seems reasonable that the chronic and normal patients in this study were under less stress than the acute subjects who had just entered the hospital for psychiatric treatment, and the results may have been due in part to this factor. Selective factors also may account for the difference obtained, and the type of suggestibility measured by the test may be a personality variable. In either case, however, the conclusion is that a decrease in suggestibility is not a necessary concomitant of schizophrenia.

No consideration was given to the fact that the chronic subjects had or were receiving some form of chemotherapy. The effect of this type of treatment on their performance in this study is not known. Also, it is noteworthy that among the subjects in the study, there were very few

subjects who showed the "negative" suggestibility reported by Williams (1932). The one subject who lost his balance falling backwards was in the normal group.

This study is based upon random samples of acute and chronic schizophrenics as these have been defined, but these subjects did not constitute a random sample of all schizophrenics. The significance of the results reported here is limited to pointing out the importance of the classification used for studies of suggestibility in this disorder.

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THE MAUDSLEY PERSONALITY INVENTORY AS A PREDICTOR OF SUSCEPTIBILITY TO HYPNOSIS[1]

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This investigation is concerned with two related problems. The first is that of the relative power of a self-administered personality inventory, and a test of primary suggestibility, to discriminate between *Ss* susceptible and insusceptible to hypnosis; the other is concerned with the relationships between personality traits and suggestibility in normal people.

Weitzenhoffer (1953, Ch. 3) summarized the work which had been done in relation to personality and suggestibility up to 1953. He called attention to the fact that the results of some workers indicated a positive relationship between neuroticism and suggestibility, but the results of other workers implied the absence of any such relationship. The former had tended to rely upon psychiatric diagnosis—and the latter upon the results of inventory-type tests of personality. Weitzenhoffer implied that this difference in method of assessment might be the cause of the apparent contradiction. He also pointed out that while the former were concerned with neurotic illness the latter were concerned with neuroticism as a personality trait. The anomalous position of hysterical illness was also commented on by Weitzenhoffer, for Eysenck had shown (1943) that psychiatrically diagnosed hysterics are no more generally suggestible than other psychoneurotics, although slightly higher on primary suggestibility.

Faw and Wilcox (1958), slightly misinterpreted Weitzenhoffer's position in the discussion of the results of their study, for they assumed that the relationship between personality variables which may be demonstrated in a normal student population, taking into account the differences between the well-adjusted *Ss* and the less well-adjusted, are on a par with relationships dependent on the differences between non-psychiatric and psychiatric *Ss*. This point was again taken up by Weitzenhoffer (1958) who restated his earlier position regarding non-psychiatric and psychiatric groups, in the light of Eysenck's criticism (1954) that the major difference between the various studies was as likely to

[1] This research was made possible by a grant from the Nuffield Foundation.

be that of the severity of the maladjustment, as the difference in the techniques of assessment. Weitzenhoffer's (1958) final observation is as follows.

"Severely psychoneurotic individuals, that is, who are undergoing intensive therapy, appear to be significantly more suggestible than individuals who belong to a population of so-called "normal" individuals.... Such a population may be expected to contain individuals ranging from poorly adjusted to well adjusted, but all falling within the range of the statistical definition of "normality". In such a "normal" population the picture appears to be reversed in that it is the better adjusted individuals who are the more suggestible. There is not necessarily any relationship between the two sets of seemingly contradictory observations, hence there is no incompatibility."

Faw and Wilcox (1958), in the study mentioned above, found that well-adjusted students were more susceptible to hypnosis than those students who were less well-adjusted. The criteria of adjustment used depended upon scores on the MMPI, the clinical assessment of diaries, and the group Rorschach, the differences for the first two of these measures being of a significant size. It was found, however, that among the more poorly adjusted *Ss* who were susceptible, there was a group with high scores on Hysteria on the MMPI, and this led the authors to the conclusion that: "... there is no all-inclusive term in the field of abnormal and clinical psychology that would be descriptive either of the susceptible or the unsusceptible hypnotic *Ss*. We must be content with the generalization that the susceptible belong to the better adjusted group with the exception of those of the susceptible with high Hy scores: and the unsusceptible belong to a deviant group not classified by a term in general use in abnormal psychology."

It seems to the present writers, however, that these results of Faw and Wilcox might be better expressed in terms of the two personality traits of Neuroticism-Stability and Extraversion-Introversion as discussed by Eysenck (1947). While the differences on "adjustment" might be mainly attributed to the main dimension of Neuroticism-Stability, the high Hy scores might be attributable to high Extraversion. Evidence which supports the implication that Extraversion as well as Stability is positively associated with hypnotic susceptibility is supplied by a further study by Wilcox and Faw (1959). Here the same *Ss*, as in the previous study, were given an inventory by which their "Social and Environmental Perceptions" were assessed. It was found that susceptible *Ss* were less concerned about adjustment to the opposite sex, less worried about personal appearance, more group oriented in regard to leisure time, more concerned with extracurricular activities and more

optimistic. Here the general picture of the characteristics of the susceptible is one of stability and social extraversion.

The results of these two studies by Faw and Wilcox, interpreted in terms of Neuroticism-Stability and Introversion-Extraversion, are very much in accord with Barber's study (1956) with students in which he found that susceptible *Ss* were more "emotionally stable" and less "hypersensitive, self-centered and suspicious" (characteristics associated with the Neuroticism-Stability dimension) and more "ascendant.... sociable.... thickskinned.... friendly", and less "restrained.... thoughtful", (all associated with the dimension of Introversion-Extraversion).

Barber also quotes a number of studies in support of the general finding that hypnotizability is associated with "desirable" personality characteristics which appear to be those associated with the stable extravert in American culture.

The present study is designed to test the efficiency of a single inventory of Neuroticism and Extraversion, the Maudsley Personality Inventory (MPI) as a discriminator between normal *Ss* susceptible and unsusceptible to hypnosis. From the results of other studies with normal groups it was predicted that *Ss* who are predominantly both stable and extraverted would be more susceptible to hypnosis than those higher on neuroticism and more introverted.

Method

The experimental population came from two sources: a group of 55 undergraduate students (36 male, 19 female), and 44 adults (36 male, 8 female). All students were in the age range 18–23 years. The adult group was recruited from the readership of a radical journal, and had an age range of 21–75 years (Mean age 33.7, S.D. = 10.7). Whereas the intellectual level of the students as a group was taken for granted, each member of the adult group was given Ravens Progressive Matrices in addition to other tests to be mentioned. Of the 44 adult *Ss*, 27 were found to have intellectual ratings above the 95th percentile, and no *S* had a rating as low as the 50th percentile. It was therefore assumed that the two groups were not significantly different intellectually.

The same battery of tests was administered to each *S* in standard form. The test battery included the MPI, the Body-Sway test and a standard procedure of hypnotic induction.

The MPI

The MPI was printed in a form which contained an 18 item Lie Scale which has been described elsewhere (Gibson, to appear). From the pro-

tocol of each *S* scores were obtained for Extraversion, Neuroticism and "Lying".

The Body-Sway Test

The *S* was blindfolded and placed with his feet together in front of a kymographic sway recorder to which he was attached by means of a thread from the back of his collar. After a fore-period of 30 seconds during which *E* spoke reassuringly, encouraging *S* to get into a comfortable, relaxed stance, a taped record of suggestions of forward sway was turned on and played for 2½ minutes, the *S*'s movements being recorded on the kymograph.

Hypnotic Induction

After the Body-Sway test the *S* was asked what he knew about hypnosis, and a short discussion of the subject was initiated with the object of increasing the likelihood of his full cooperation. Induction of hypnosis was then attempted with the *S* lying relaxed on a couch listening to a metronome and fixating a spot of light on the ceiling. A standard patter was used, suggestions being aimed at making the *S* feel that his eyes would close "of their own accord", and once his eyes were closed that he would be unable to open them. If and when the eyes were closed a definite challenge was made to the *S* to try to open his eyes to convince himself that he could not. If the eyes had not closed after a period of 7 minutes' patter from *E*, or if *S* succeeded in opening his eyes when challenged, he was classed as "insusceptible". It was found that with all *S*s with whom eye catalepsy was achieved, a number of other classical hypnotic phenomena could also be elicited.

Results

MPI

The *S*s were divided into two groups on the basis of their L scores on the MPI, a major group of presumed "honest" *S*s (n = 77) and a minor group of presumed "liars" (n = 22). A cut-off point of 10+ on the L scale was taken as the basis of this dichotomy, the rationale of which is described elsewhere (Gibson, to appear). The data for these two groups were treated separately as the N scores of the "liar" group were suspect.

Body-Sway

Two measures of Body-Sway (BS) were derived from the kymographic records.

(1) BS Time Score. This concerns only those *S*s who actually lost

their balance and stumbled forwards (33 *Ss*). The Time Score is the number of seconds the *S* stood without falling after the suggestions had begun.

(2) BS Extent. The maximum distance swayed forwards *at any point* during the 2½ minutes of suggestion was measured in inches, and this measurement is the score. Falls were scored arbitrarily as 10 inches, as no *S* swayed as far as this and kept his balance.

(a) Dividing the population between "honest" and "liars" on the basis of their MPI scores as discussed previously, the following data were obtained with regard to the first BS measure, by dichotomizing the Time Scores at the median (45 seconds).

	Early Falls	Late Falls
"Honest"	14	17
"Liars"	5	0

The difference which is apparent here is not quite significant at the .05 level (using Fisher's exact probabilities test).

(b) By dichotomizing the Extent scores at the median (6.5 inches), the following data were obtained:

	High Sway	Low Sway
"Honest"	43	34
"Liars"	7	15

Chi^2 of the difference = 3.95 with 1 df., $p < .05$.

Thus there is a tendency for the "liars" to be less positively influenced by the Body-Sway suggestions. This fact is further illustrated by the performance of those *Ss* who swayed *backwards* from the vertical. By examining performance over the last 60 seconds, it was found that 9 *Ss* maintained a backwards sway during this period. None of these backwards swayers were hypnotizable and 7 of them were in the "liar" category.

Hypnosis

Using the criteria of hypnosis defined previously, and dividing the population between "honest" and "liars" as before, the following data were obtained:

	Hypnotized	Not hypnotized
"Honest"	39	38
"Liars"	5	17

Chi^2 of difference = 5.40, $p < .05$.

Thus the "honest" *Ss* were significantly more susceptible to hypnosis than the "liars".

TABLE 1

Intercorrelations between Variables

	1	2	3	4	5	6*
1. BS Time Score	—	—	.51	−.33	.21	−.48
2. BS Extent		—	.64	−.37	−.03	.05
3. Hypnosis			—	−.46	−.02	−.38
4. "Lying"				—	−.02	.09
5. Extraversion					—	−.16
6. Neuroticism						—

* For 6 the "honest" *Ss* only have been used. All figures in the table are product moment r's × 100 except for 2 and 3 where r_{tet} has been used. With "lying" the r_{tet} is based upon the dichotomy between "liars" and "honest".

Intercorrelations

Intercorrelations between the principal variables examined are set out in Table 1. For the variable of Neuroticism the scores of the 77 "honest" *Ss* only have been used, because the evidence presented elsewhere (Gibson, to appear) implies that the N scores of the "liars" have been distorted and do not represent a true measure of this trait in these *Ss*. There is no evidence that the Extraversion scores are similarly distorted.

The correlation of −.38 between N and hypnosis (H) is in the direction predicted from the studies discussed earlier. The more stable *Ss* were on the whole more susceptible to hypnosis. It is somewhat surprising to find zero correlation between E and H, for it was expected that the more extraverted *Ss* would be more susceptible. To test whether this might be due to an artifact of the E scores of the "liars" (which might be invalid), the correlation between E and H was recomputed for the "honest" group separately; but again it is of negligible size (r = −.02). Assuming E and N to be the main parameters of personality, it is important to see how they will *jointly* assist in discrimination between *Ss* with respect to hypnotic susceptibility. As these measures are virtually orthogonal, the scores of each *S* were plotted with respect to both variables and the following data obtained by dichotomizing at the means.

	Hypnotized			*Not hypnotized*		
	−	N	+	−	N	+
+	19		3	8		14
E						
−	7		10	8		8

(*N.B.* These data concern only the "honest" *Ss*.)

The Chi^2 of the difference between the hypnotized and non-hypnotized, for the figures in the 4 quadrants is 4.48, 7.11, 0.07, 0.22 giving a total Chi^2 of 11.88 with 3 d.f. which is significant at the .01 level.

It will be seen that the favoured quadrant for the hypnotized *Ss* is E + N−, that is Stable Extraversion. For those insusceptible to hypnosis the favoured quadrant is E + N+, that is Neurotic Extraversion. It is interesting to note that the discriminatory power of N is operative only for the upper half of the E distribution. Thus *for the more extraverted* Ss the relationship between Neuroticism and Hypnosis is thus:

N \ H	−	+
+	14	3
−	8	19

$r_{tet} = -.75$. Number of *Ss* misclassified = 11.

When we look at the discriminatory power of E we note that it is useful only for the half of the population which is high on N. Thus *for the more neurotic* Ss the relationship between Extraversion and Hypnosis is thus:

E \ H	−	+
+	14	3
−	8	10

$r_{tet} = -.61$. Number of *Ss* misclassified = 11.

The relationship between the three variables E, N and H is therefore more complex than the original predictions implied.

The above relationships hold for the 77 "honest" *Ss* only. For the 22 *Ss* labeled "liars", it was decided to reject the N scores as being of doubtful validity. However, it was found for the total population that the L score correlated −.46 with hypnosis. The best prediction therefore is that all "liars" would be insusceptible to hypnosis. In fact, only 5 of the "liars" were susceptible, thus by using L alone as a predictor, only 5 *Ss* in this group are misclassified.

Dividing the experimental group into broad categories, such as "liars", neurotic-extraverts, etc., etc., involves only the most primitive kind of measurement, and takes no account of any between-person score differences other than those which establish membership of the categories

concerned. Conceived of in these simple terms, however, the data suggest the following generalisations:

a) Neurotic-extraverts are not susceptible to hypnosis.
b) Stable-extraverts and neurotic-introverts are susceptible.
c) No prediction can be made in the case of stable-introverts.
d) "Liars" are not susceptible.

In the total experimental group, 15 subjects fall into category (c). There remain 84 in respect of whom a prediction as to susceptibility can be made, and of this number 24 are misclassified when this is done. Using only the 3 scales of the MPI, therefore, 28.6 per cent of those predictions which can be made turn out to be incorrect. This outcome may be compared with the discriminatory power of the Extent score of the BS test, where the relationship is:

BS \ H	−	+
+	17	33
−	38	11

r_{tet} = .64. Proportion of *S*s misclassified = 28.3 per cent.

Discussion

The results of this study suggest that personality data obtained by means of the Maudsley Personality Inventory can be used for forecasting susceptibility to hypnosis with an accuracy similar to that which is possible by using the Body-Sway test, save that no prediction is possible in the case of stable-introverts. This is an interesting finding, since the Body-Sway test seems to be one of the best predictors of hypnotic susceptibility, and the correlation of 0.64 between the two variables which was observed in the present investigation is typical of the values usually reported. In considering this outcome, however, it is necessary to bear in mind the fact that no cross-validation study has yet been performed.

The data obtained from the MPI relate to three personality variables E, N and L. The present results were obtained only after taking the precaution of dividing the population into two groups, the "honest" and "liars", on the basis of their L scores, and analysing their results separately. For the major category, the "honest", whose scores were considered valid, the expected association was found between Stable Extraversion and susceptibility to hypnosis. The curious fact emerged that the group which showed traits most akin to hysteria, that is the Neurotic

Extraverts, were the *least* susceptible to hypnosis. Thus not only was the classically assumed relationship between hysteria and susceptibility not supported, as in Eysenck's study (1943) but a negative relationship is implied for normal *Ss*. If N + E + on the MPI can be equated with the Hy score on the MMPI, then the present data directly go against those of Faw and Wilcox (1958) who reported a positive association between Hy and susceptibility. The finding that as a discriminator of susceptibility, N is powerful in the Extraverted half of the population ($r = -.75$), and that E is powerful in the Neurotic half ($r = -.61$) is of considerable interest. It is understandable that in an *experimental* population who do not expect to gain any therapeutic benefit from the induction of hypnosis, the more tense, anxious and neurotically inclined *Ss* might put up some more or less deliberate resistance to "succumbing" to it. But such a supposition would not explain why for the *introverted* half of the population neuroticism was a positive indicator of susceptibility to hypnosis.

This study has thrown some further light on the nature of the variable of the L scale, and it is now possible to summarize the findings of the present study and that previously quoted (Gibson, to appear) concerning the personality characteristics of the "liars", thus:

(1) They formed a distinctive 'tail' added on to an otherwise normal distribution of L scores, creating a positive skew.

(2) They tended to award themselves very low N scores.

(3) They tended to sway backwards on the Body-Sway test—an atypical response for this population. All those who fell (5 *Ss*) fell *early* (a characteristic which was associated with high Neuroticism in this population).

(4) They tended to be insusceptible to hypnosis.

It is therefore suggested that the "liars" were qualitatively different from the other *Ss* in that, although perhaps possessing normal *aptitude* for response, they displayed a strong negative *attitude* (Eysenck, 1943) both when subjected to suggestibility tests and also to hypnotic induction procedures. It does not of course necessarily follow that the *Ss* were themselves conscious of this negativism. The 18 L scale items are scattered among 80 items in the form of MPI which was used, and therefore such *Ss* could have little idea of the improbable picture of moral perfection they were giving of themselves by endorsing so many L statements. It is possible, of course, that a number of the more sophisticated *Ss* saw through the device of the L scale and were not "caught" by it, successfully deceiving the experimenter. This would have contributed to the imperfection of the observed correlations.

In view of the controversy over the relationship between neuroticism

and suggestibility which was referred to in the introduction, the correlations which were found in this study are of particular interest. It was found that those high on N tended to fall *early* if they fell at all on the BS test, but that otherwise there was virtually zero correlation between N and the *Extent* of BS. This of course concerns the "honest" subjects only, for the N scores of the "liars" have been regarded as being qualitatively different. If however the N scores of both "honest" and "liars" were thrown together, a highly non-linear positive correlation between N and BS (Extent) would be observed, because "liars" tend both to resist the BS test and to award themselves very low N scores. Any such correlation based on the N scores of the whole population taken together would be quite invalid, in view of all the other evidence which has emerged in this study. Indeed, the variable of "lying" appears to be associated positively with other variables in a cluster of intercorrelations which embrace Neuroticism.

Although this study shows no correlation between N and the extent of BS, one possible explanation of the *early fall* of those high on N might be ventured in terms of static ataxia. There is a great deal of evidence indicating that neurotics are more ataxic than normals, e.g. Eysenck (1947), and indeed the measure of static ataxia has been found to be a better discriminator between neurotics and normals than the extent of suggested BS, e.g. Clarke (1950), Gravely (1950), S. B. G. Eysenck (1955). However, there are few data showing how static ataxia relates to neuroticism in normal populations. Heron (1951) found that in a normal industrial population the trait of neuroticism was positively related to static ataxia, whereas Venables' data (1953) did not substantiate this. The present study does not give direct data on static ataxia, for during the 30 second fore-period *E* concentrated on giving *S* reassurance and suggesting that he should relax into a comfortable posture. This is at variance with the instructions given by other experimenters when static ataxia was being measured.

If, on the basis of the available data, we accept that high neuroticism in a normal population would be associated with a high degree of static ataxia, then the facts concerning those subjects who fell early may be explained as follows. The subjects higher on N, being more ataxic, would lose their balance more easily when first swaying forwards in response to suggestions, whereas the more stable subjects would be able to tolerate a leaning-forwards posture for a longer period.

Summary

1. 99 *Ss* were tested on the MPI, the Body-Sway (BS) test, and their reaction to hypnotic induction.

2. It was found that the Extraversion and Neuroticism scales of the MPI, when used in conjunction, were efficient predictors of susceptibility to hypnosis, but that the relationships involved were not of a simple linear and additive kind. The most susceptible subjects were the Stable Extraverts.

3. Those scoring high on the Lie scale tended to be insusceptible to hypnosis and to be atypical on the BS test in a manner which suggests that "lying" may be a variable associated with a negative attitude in the test situation.

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AMERICAN BOARD OF HYPNOSIS IN DENTISTRY

The American Board of Hypnosis in Dentistry will meet October 5th, 1961, at the Sheraton-Cleveland Hotel, Cleveland, Ohio. Applicants for certification who wish to appear for examination at this time should communicate with the Secretary, *Dr. S. Irwin Shaw, 18201 Cherrylawn Avenue, Detroit 21, Michigan*, prior to September 1st, 1961.

S. Irwin Shaw, D.M.D.
Secretary

*REFERENCES**

The International Journal of Clinical and Experimental Hypnosis has used as a source o preparation for citing and listing references the 1957 revision of the American Psychologica Association's Publication Manual. That Manual has now been amended and the followin changes are now being utilized:

The procedures for citing and listing references in APA journal articles hav been amended. Therefore, Section 4.7 (pages 28–29) and Paragraph 8.25 (page 53) of th 1957 Revision of the APA *Publication Manual* are amended as follows:

4.7 *References and Quotations in the Text*

4.71 *References.* Show all references in the text by citing in parentheses the author surname and the year of publication as entered in the list of references at the end of th article. Example: ". . . a recent study (Jones, 1958) has shown. . . ."

a. If the name of the author occurs in the text, the reference citation in the parenthes includes only the year of publication (the author's surname is *not* repeated). Exampl "Jones (1958) has shown. . . ."

b. If a reference has *two authors*, the citation includes the surnames of both authors eac time the citation appears in the text. Example: ". . . a recent study (Jones & Smith, 195 has shown. . . ." If a reference has *more than two authors*, the citation includes the surnam of all the authors the first time the citation appears in the text; later citations of the sa reference include only the surname of the senior author and the abbreviation "et al." Exa ples: ". . . a recent study (Jones, Smith, Brown, & White, 1958) has shown. . . ." "T study previously cited (Jones et al., 1958) suggests. . . ."

c. If the reference list includes publications by two or more authors with the *same s name*, citations in the text include their initials. Example: ". . . a recent study (C. L. Jon 1958) has shown . . . but A. G. Jones (1956) has suggested. . . ."

d. If the reference list includes more than one publication in the *same year* by a giv author or given multiple authors, citations are distinguished by adding a, b, etc. to th year of publication (see also Paragraph 8.25). Example: ". . . a recent study (Jones, 1958 has shown. . . ."

e. Several references cited at the same point in the text are separated by semicolons a enclosed in one pair of parentheses. The order is alphabetical by author's surname or, if n by the same author, in sequence by year of publication. Examples: "Recent studies (Brow 1958; Jones, 1953; Smith, 1956) have shown. . . ." "Recent studies (Jones, 1956; Jone 1958a; Jones, 1958b) have shown. . . ." "Jones (1956; 1958a; 1958b) has shown. . . ."

f. To refer to a particular page, pages, or chapter of a reference, give the page or chapt numbers following the reference citation.

Examples: (Jones, 1958, p. 410), (Jones, 1958, pp. 410–412), (Brown, 1958, p. 410; Smit 1956, pp. 410–412), (Jones, 1958, Ch. 2).

g. When reference is made to one source in general and to particular pages of anoth source, use a semicolon to separate the citations. Example: (Brown, 1958; Smith, 19 pp. 410–412).

h. Do not use footnotes to cite references to the literature. Cite the reference by autho surname and year of publication and give the full description in the alphabetical list at t end of the article.

4.72–4.75. (No change)

4.76. (Change "reference number" to read "author's surname and year of publication.

8.25 *Listing references.* The entries in the reference list are arranged alphabetically author's surname. The entries are *not* preceded by arabic numbers. The reference list i cludes only references cited in the text. If the reference list includes more than one publi tion in the same year by a given author, the letters a, b, etc. are added in parentheses af the final period of each such reference entry.

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* This modification of reference style shall be required for all manuscripts submitted this Journal.